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THE MEDICAL NEWS AND LIBRARY.

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CHOLERA.

Notes on the Pathology and Treatment of Cholera. By GEORGE JOHNSON, M. D., F. R. C. P., Professor of Medicine in King's College, &c. &c. &c.

There are few diseases, the treatment of which has been more influenced by pathological theories than cholera. The theory which has gained almost universal acceptance is, that the worst symptoms of the disease are due to the drain of fluid from the blood. The practice which has been based upon this theory is to check the purging by opiates and astringents, and to restore to the blood its lost constituents by saline injections into the veins. What if this theory be erroneous, and the practice suggested by it injurious? That the theory and the practice are both wrong, I am persuaded; and I propose now to give the reasons for my belief.

First, then, let us inquire, *What is the relation between the symptoms of choleraic collapse and the loss of fluid by vomiting and purging?* It will, I suppose, be conceded by all who are prepared to argue this question, that if the symptoms of collapse are occasioned by a drain of fluid from the blood, there must, as a rule, be a direct relation between the degree of collapse and the amount of liquid which escapes from the blood. Now, so far is this from being the case, that there are few writers of any note or authority upon the subject of cholera who do not either assert distinctly, or record facts from which the inference plainly follows, that not only is there no direct relation between the loss of liquid by vomiting and purging and the degree of collapse; but that these conditions often bear an inverse ratio to each other. In confirmation of this statement, I purpose now to quote some of the best known authors on the subject of cholera.

Dr. Edmund Parkes says: "My cases bear out the observations of Scott, Jameson, Orton, Kennedy, Copland, and, in fact, al-

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most all the English writers of reputation, that there is absolutely no ratio between these two classes of symptoms" (*i. e.*, between the purging and vomiting and the symptoms of collapse) "or that they appear even to observe an inverse ratio to each other. Thus, at a period of the case when the algide symptoms were most fully developed—viz., in the last five hours—the purging ceased; in the cases where the algide symptoms were prominent throughout, and which cases were consequently the most malignant and the most rapidly fatal, the passage of fluid from the intestines was oftentimes trivial in degree and shortened in the period of its occurrence. In cases in which the vomiting and purging were excessive, the algide symptoms often came on slowly, and were less marked and deadly." (*Researches into the Pathology and Treatment of the Asiatic or Algide Cholera.*)

Dr. Parkes, then, in illustration of these remarks, cites some cases in which the frequency of the vomiting and purging was quite out of proportion to the severity of the other symptoms. He afterwards states that "it may be objected to observations of this kind, that the number of stools is, after all, no certain indication of the amount of fluid passed. This objection would be of weight in cases where the stools were not very different in number; but in some of these cases cited above, we have two or four stools attended by more rapid death than twenty-five or twenty stools; and yet, in the first case, it would be impossible not to suppose the quantity of the fluid passed to be much below that of the second case." He adds, "it may be confidently asserted that there is no one who has seen much of cholera who does not know that, exclusive of the mildest forms of the disease, a case with little vomiting and purging is more malignant and more rapidly fatal than one in which these are prominent symptoms."

With reference to the varieties in the general symptoms of cholera, Scott makes the following statement: "A frequent variety, the worst of all, is that which is noted for the very slight commotion in the system; in which there is no vomiting, hardly any purging—perhaps only one or two loose stools—no perceptible spasm, no pain of any kind; a mortal coldness with arrest of the circulation comes on from the beginning, and the patient dies without a struggle. This has frequently manifested itself as the prevailing type, and almost all die who are attacked by it." (*Report on the Epidemic Cholera.*)

The testimony of Bell is to the same effect. He says: "It has been found that the more violent the prominent symptoms are, the more likely is a cure to be effected; and that when the disease is attended with rapid collapse, little or no vomiting and purging, and no spasm, the prognosis is very unfavourable." (*Treatise on Cholera Asphyxia, or Epidemic Cholera.*)

Orton, in several passages of his essay, alludes to the fact that, in the worst forms of the disease, vomiting and purging are slight or quickly cease, or even do not occur at all. (*An Essay on the Epidemic Cholera of India.*)

Twining gives cases which illustrate the same general principle. Thus, he reports (*Clinical Illustrations of the More Important Diseases of Bengal*, p. 10) the case of a gentleman who died nine hours after the commencement of urgent symptoms, in whom there were occasional slight efforts to vomit at intervals of half an hour, and he had only four stools from the commencement to the termination of the attack. And, in another part of his work (p. 37), he says, "We often see patients vomiting violently for hours, and others purged profusely for several days without cholera (*i. e.*, collapse) coming on."

The authors above cited have all observed the disease in India; but the testimony of those who have witnessed it in Europe is in strict accordance with that of the Indian authorities. Thus, Magendie, describing cholera as he saw it in Paris in 1832, makes the following statement: "Some patients have no evacuations, inasmuch as one is obliged to excite them; for the evacuations, though associated with the disease, are not one of the most serious symptoms; and those patients who have had copious evacuations have been more easily treated than those who have had none. This is a remark which has been made by many Physicians." (*Lecons sur le Cholero Morbus.*)

Mr. French states, amongst other reasons for believing that the intestinal discharges are salutary, that while "cholera, in its most intense form, produces death instantly without discharges, all those who recover from its attack experience the peculiar discharges more or less." And, again, in favour of the same view, he says, is "the ultimate recovery of persons who have con-

tinued in a state of collapse for a considerable length of time, often extending to a period of three days, and who, in all instances, sustained enormous discharges." (*The Nature of Cholera Investigated.*)

Dr. Gull, in his *Report on the Morbid Anatomy and Pathology of Cholera*, published by the Royal College of Physicians in 1853, cites the evidence of several practitioners to the effect that, in many cases, "the evacuations appeared to be wholly insufficient to account for the fatal collapse." And one case which came under Dr. Gull's observation, affords a striking illustration of the same principle. "On a *post-mortem* examination, the large intestines contained healthy feces; whilst in the upper two-thirds of the small intestine, the mucous membrane presented the ordinary changes induced by the cholera process, and the rice water effusion was abundant." Dr. Gull adduces this case to show that "*cholera sicca*, in a strict sense, does not occur; for although the disease may be fatal without any evacuation, the intestines after death, in such cases, have been found to contain the rice-water fluid." It can scarcely be doubted, however, that when, as in this case, the purging has been insufficient to remove the feculent contents of the large intestine, the loss of fluid must have been out of all proportion less than in most cases in which recovery takes place. And Dr. Gull in another part of his Report (p. 211), admits that "the intensity of the symptoms is often in no inconsiderable degree greater than can be accounted for by the amount of the effusion."

With respect, then, to the question whether there is any direct relation between the loss of fluid by purging and the symptoms of collapse, we have a large amount of concurrent testimony to the effect that no such relationship exists.

Even admitting that there were a direct and constant relationship between the loss of fluid and the degree of collapse, further evidence would still be required to prove that they stand to each other in the relation of cause and effect. It might be that they are only the effect of one common cause, which while, on the one hand, it gives rise to collapse, on the other excites vomiting and purging. How far this may be the case, we shall have to consider hereafter. In the meantime, it must, I think, be conceded, that the evidence of there being an inverse rather than a direct ratio between the degree of collapse and the loss of liquid by vomiting and purging, is fatal to the hypothesis so generally received and acted upon, that choleraic collapse is caused by the drain of liquid from the blood.

We will next go on to inquire whether the symptoms of collapse are such as an excessive drain of liquid from the blood might be supposed to produce.

With reference to the hypothesis that the characteristic symptoms of choleraic collapse are caused by the loss of the watery constituents of the blood, we have next to inquire, *whether the symptoms of collapse are such as an excessive drain of fluid from the blood would be likely to produce.*

Now, what is the condition of a patient who has suffered a profuse drain from the blood, whether of water alone or all the blood-constituents? What is the effect of a copious hemorrhage, of a profuse and long continued leucorrhœa, of prolonged lactation, of excessive purging, whether the result of disease or of medicine? Is not the condition of a patient who has been exhausted by such means, of the nature of syncope? There are a small and frequent pulse, a pallid skin, dimness of sight, and *tinnitus aurium:* these symptoms being much increased by the erect posture; and, in extreme cases, the head cannot be raised from the pillow, even for a moment, without the occurrence of syncope. For a patient in this condition to walk or stand, or even to sit up, is simply impossible. Now, there is something in the collapse of cholera which is essentially different from the mere exhaustion which leads to syncope. In fact, almost the only symptom which is common to the two conditions is the extreme smallness and feebleness of the pulse.

One great distinction consists in the remarkable blueness, coldness, and other symptoms indicating that during the collapse of cholera the aeration of the blood is greatly interfered with; while no such symptoms of obstructed respiration occur in ordinary cases of exhaustion from excessive purging. Another great and obvious distinction is this: that whereas a patient exhausted by a drain of fluid from the blood, and therefore verging on syncope, is unable to assume the erect posture without losing at once his pulse and his consciousness, a patient in the collapse of cholera, whose skin is blue and icy cold and whose pulse is imperceptible or extremely small and feeble, is often able to stand

up without becoming faint, and even to walk a distance which must require a considerable amount of muscular exertion.

This is a fact alluded to by several authors; and no one can have watched cases of the disease without having observed the surprising amount of muscular exertion of which even a cold and pulseless patient is capable. It is scarcely necessary to quote authorities for this statement: but I will refer to one in illustration of what has been advanced.

Scott says (*Report on the Epidemic Cholera*, p. 24): "Instances are not wanted of patients being able to walk, and to perform many of their usual avocations, even after the circulation has been so much arrested that the pulse has not been discernible at the wrist." The same author states, in another place, when speaking of the effects of bloodletting (p. 58), "It is remarkable that, in a disease like cholera, syncope should be so rare a symptom." And, again, (p. 28), "During the progress of this disorder, when the nervous energy seems to be almost annihilated, and the functions of the heart and arteries to be abolished, this symptom (syncope) is yet very rarely observed."

Another remarkable difference between the collapse of cholera and the exhaustion caused by an excessive drain of liquid from the blood, consists in the rapidity with which a patient often recovers from the former condition. As an instance of this, I may quote the following from Dr. Gull's *Report* (p. 135): "I have seen" (says Mr Grainger) "a man stand at his door on Wednesday, who on Monday was in perfect collapse." And this observation, as Dr. Gull observes, is in accordance with the experience of others.

With reference to this remarkable feature of cholera, Twining makes the following statements (*Clinical Illustrations of the more Important Diseases of Bengal*, p. 20): "In cases not fatal, the progress of recovery often almost as rapid as the accession of cholera; and if the disease be treated at the very onset, it is not uncommon to see a person well on the third day, after an attack of the worst symptoms, which had commenced with coldness and collapse, and who, if left without remedies, would probably have died in six or eight hours. *In these instances recovery seems almost as sudden and complete as in cases of patients who are resuscitated after suspension of animation from submersion in water.*" It is scarcely necessary to insist upon the fact, that no such instances of rapid recovery from extreme prostration consequent on a drain of fluids from the blood are ever known to occur; nor, from the nature of things, is it possible that a great loss of blood-constituents can be restored with such extreme rapidity.

The natural and obvious inference from these facts appears to be, that there is an essential difference between the condition of a patient who has been exhausted by a profuse drain from the blood, and that of one in collapse with cholera. It is, therefore, incumbent on those who maintain that choleraic collapse is due to the loss of fluid by the intestinal canal, to explain, if they can, the remarkable differences which have been here pointed out between the symptoms of collapse and those of ordinary syncope.

Our next inquiry shall be, whether the effect of various modes of treatment in the collapse of cholera affords any support to the theory that a drain of fluid from the blood is the essential or the chief cause of that condition.—*Brit. Med. Journ.*, May 6 and 27, 1865.

(*To be continued.*)

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Ice-Bogs in Cholera.—In an editorial article on this subject in a late number of the *Medical Times and Gazette* (Nov. 25, 1865) we find the following remarks, which seem to us to have much weight. Dr Chapman's theory as to the action of his ice and hot-water bags, has always appeared to us as questionable, and yet these cold and hot applications are doubtless very potent measures, and must exert an influence in some morbid affections. Experience may show that they do so in cholera:—

"We understand that a majority of the medical men at Southampton express themselves favourably as regards the ice treatment in cholera. No doubt we shall soon hear more particulars. It must be remembered that ice is not the first remedy which has appeared to do good in this hopeless malady. There were the saline injections, for example, based upon "incontrovertible physiological principles, evident to the most uninitiated," etc. etc.; there was the small dose of calomel, and a host of others; and what we desire is, a statement of the excess of benefit derived from the ice over that from careful treatment without drugs (which

we pray for, should we have cholera ourselves), and over other systems of medication. When we say careful treatment, we mean the giving of nourishment and the comforting the patient in those small details which can only be attended to by a kind and skilful medical attendant, who does not conceive himself bound to *try* something for the sake of appearances.

Whilst then, we look out for, and shall gratefully record any facts, we may employ ourselves in criticizing the theory of the ice-bag, since it has made its way into the newspapers, and has been even honoured with one of those odd, quasi-Greek names (*neuropathy*) which seem so attractive to the popular ear.

To begin, then. We want more information, derived from comparative trial, as to the effects of heat or cold to the spine, and heat or cold applied to the skin of the trunk in various places. Patients with bronchitis, for example, have been treated from time immemorial by the external application of heat. Every one uses linseed and other poultices to the front of the chest, the sides, and the back, all together or in turn. They are used of all temperatures—hot, to redden the skin; cool, to soothe and comfort. The effect of such applications is known to be beneficial; they generally cause a universal glow on the skin and a gentle perspiration. Are we to believe that a poultice applied over the spine between the scapulæ would behave as an old-fashioned poultice, or that it would excite the sympathetic and make it cut off part of the supply of blood to the irritated bronchial membrane? If the latter, what collateral signs are there? Would a warm poultice to the back, for example, diminish the circulation in any part of the skin? which it ought to do, if Dr. Chapman's hypothesis be correct. Can Dr. Chapman show that a hot-water bag to the centre of the back between the scapulæ relieves pulmonary congestion, more or less, or otherwise, than a hot-water bag applied to the ribs, or sternum, which we know to do good?

Dr. Chapman says he has cured constipation by applying heat to the spine. Many practitioners have cured it by applying cold. A cold sitz-bath is a favourite and valuable remedy. Dr. Chapman cures hemorrhage by applying heat to the spine, to excite the sympathetic and contract the arterics There is the old remedy of cold to the nape of the neck for checking nose-bleeding; and we want to know which is right, because "upon strict physiological principles" both cannot be.

It may seem impertinent, but we really desiderate some proof that an ice-bag does really effect the temperature of the spinal marrow; but we suppose Dr. Chapman is prepared with this.

Now, let us turn to sea-sickness. If we understand Dr. Chapman aright, this is a direct effect of an excitation of the spinal cord. This delicate part is shaken and irritated by the horrid up and downs of the vessel, and so becomes congested or loaded with blood; being full of blood, it generates more nerve-force; this nerve-force contracts the arteries of the brain and of the stomach; by some (hitherto unknown) law, much mucus is secreted when the supply of blood to a mucous membrane is diminished; and the muscular fibres of the stomach and bowels become restless and irritable under want of nourishment, and so execute those peristaltic movements whose effects are known as vomiting and diarrhœa.

We certainly find it not easy to treat this kind of pathological reasoning gravely. Certainly the end of this chain of slap-dash deductions seems a great way from the beginning, and we have much doubt as to the safety of a good many of the links. For example, sea-sickness is but one of half-a-dozen similar kinds of sickness which depend, without doubt, on some similar condition of the nervous system; and what is true of one is probably true of all. There is sea-sickness, sickness from being whirled or spun round, sickness from looking suddenly over a precipice, sickness from undulating movement of visible objects so as to produce a subjective sense of unsteadiness. sickness from wearing spectacles which dazzle, sickness at the sight of blood, sickness from tobacco. We suppose that Dr. Chapman can prove that in sea-sickness (as in diarrhœa, etc. etc.) the spinal cord is really hyperæmic—for this, the foundation stone of his system, cannot have been left as a probability merely; but what proof is there of congestion in the spinal cord in any of the other analogous forms of sickness? If the gentlest undulations of a ship make the spinal cord hyperæmic, what does a hard trotting horse do? All these things strike one as unfavourable to the theory. So do the ordinary *juvantia* and *lædentia*. But let us wait for the facts. Do ice-bags cure sea-sickness? If so, we have some-

thing valuable in hand, and a second theory will follow.

As for the ice-bag in cholera, as we have before said, we await the facts in all humility. If Dr. Chapman succeeds in proving that they contribute anyhow to the safety or comfort of the patients, he will not miss his reward. But we must confess to strange misgivings as to his theory. That assumes such a surexcitation of the sympathetic as to constrict every artery in the body, but especially those of the intestines. Now, here is a point on which surely pathological anatomists have evidence to give. If we can't inspect the spinal cord during sea-sickness, unluckily, opportunities enough are found of inspecting the mucous membrane of the bowels after death by cholera. And what is found there? What are the records of the post-mortem inspections made in '31, '49, and '54? Was the spinal cord congested? Was the mucous membrane of the alimentary canal deprived of vascularity! Was there ground for the theory of secretion of mucus as a consequence of diminished supply of blood? Who does not recollect in the worst cases of cholera in '49 and '54 not mere rice-water stools, but *red-currant jelly stools;* florid blood poured out from the mucous membrane and mixed with the rice-water? Do we hear nothing of intense injection and ecchymosis? And this from a membrane whose arteries are closed? A good theory is like a bit of India-rubber, and will fit almost everything; but we can't see how by any stretching Dr. Chapman's ice theory can fit the facts as to the state of mucous membrane after death by cholera.

Here we must stop. We do not in the least doubt but that the ice and hot-water bags will be found available as remedies in several conditions, more particularly where least expected. But we must confess that the system of *neuropathy*, as a whole, simply ignores all the physiology and pathology and animal chemistry of the last thirty years. It ignores all we know about the intrinsic powers of growth inherent in the cell or germinal element of tissues, and about the influence of the composition of the blood. It takes us back to that dreamy time, from 1680 to 1840—up to the end of the John Hunter era—when the state of the bloodvessels was the beginning and end of medical hypothesis, and when patients were bled and physicked in accordance with the "latest physiological principles," no matter whether these hung upon Cullen's "spasm" of the vessels, or John Hunter's "increased action" of them.

Progress of Cholera.—In an editorial in the *Lancet* of December 2d, it is stated that, "with the exception of Naples and the governments of Kiev and Podolia in European Russia, the epidemic is declining, is stationary, or has ceased in all the centres of infection north of the Mediterranean. If it were not for the extension of the malady in Russia, the singularly slight impact of the epidemic on our own shores hitherto, so different from the antecedent outbreaks of former epidemics, might almost justify a hope that England would escape with but a slight visitation. Gradually, however, the disease is advancing towards, nay, indeed, has entered, the old track by which central and northern Europe, and subsequently our own country, were attacked in 1831–32 and 1847–48. We may not, then, hug ourselves in the pleasant belief that the ravages of the pestilence will not once more extend to us."

He would be a bold prophet who should venture to predict that the cholera *would* or would *not* visit this country next summer; but it would be the most culpable negligence not to adopt every precautionary measure which experience has shown to be calculated to prevent its visitation or to moderate its ravages, should it unhappily invade our shores We shall in our next indicate some of those measures.

HOSPITAL NOTES AND GLEANINGS.

Remarkable Repair of Extensive Injuries.—On the 29th of July last we saw a boy, fourteen years old, admitted into St. Bartholomew's Hospital, whose condition seemed to hold out scarcely a hope of recovery. He had got entangled in some cord-making machinery, and had been rolled by a revolving metal cylinder much as linen is pressed in a mangle. The ecchymosis was so extensive that his face was enormously swollen and of a dark purple colour, the conjunctivæ intensely chemosed, and the features unrecognizable. The aspect resembled that of a very bad case of scurvy, or perhaps still more, as Mr. Paget remarked, that condition of dark tumefaction which sometimes precedes the

eruption in malignant variola. The boy had sustained, besides, the following injuries: oblique fracture of the left femur; separation of the epiphysis of the right femur; wound near the left elbow-joint, possibly entering it; dislocation of the right humerus into the axilla. There was concussion of the brain, and he lay for many hours in a state of complete collapse. A sixth of a grain of morphia was injected subcutaneously, and this was continued daily. On the 26th of August we found him looking cheerful and completely altered in appearance; there was scarcely any ecchymosis remaining; the wound about the elbow-joint had healed; the left femur was encased in a gypsum splint, and the right had united. When we saw him last, on Sept. 27th, the injuries described were repaired, but he was suffering from suppuration in the neighbourhood of the right shoulder-joint. Mr. Eccles, the house-surgeon, who had charge of him, tells us that after the reduction of the dislocation, which was easily effected, inflammation took place, and a large abscess formed, which was opened over the pectoral muscle and in the outer wall of the axilla. It is probable that extensive extravasation of blood took place into the joint at the time of the accident. He still complained of stiffness about the back.

The case furnishes a remarkable instance of the elasticity of life at this particular age. A few years later, and the lad's hardened tissues would have been crushed probably beyond repair.—*Lancet*, Oct. 28, 1865.

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Laceration of the Jejunum from a Fall upon the Pavement.—The following case, for the particulars of which we are indebted to Mr. Mason, late house-surgeon to University College Hospital, was remarkable both for the simple nature of the accident—a fall upon the pavement—which caused the injury, and for the length of time which elapsed before any very serious symptoms ensued.

At eight o'clock on an evening in July last a man about thirty years of age tripped up and fell forward upon the curbstone. Feeling no ill effects, he continued his walk, and reached home. During the night he experienced pain in the bowels and purging, and at nine o'clock on the following morning he asked the porter at the hospital for a dose of diarrhœa mixture. This was given to him, and he went away. At one P. M. he again appeared, being then in a state of collapse from intense peritonitis. He was admitted, and died eight hours afterwards.

The autopsy showed a small lacerated opening in the upper part of the jejunum. Two inches above it, in the last portion of the duodenum, a blood-clot the size of a small walnut lay under the mucous membrane, and the surrounding tissues were somewhat stained with blood. The peritoneal cavity contained a considerable amount of fluid, together with a number of gooseberry-skins and peas. The surface of the intestines was covered with soapy-looking lymph. There was no appearance of any ulceration of the intestine. The abdominal integuments showed no injury.—*Ibid.*

MEDICAL NEWS.

DOMESTIC INTELLIGENCE.

University of Pennsylvania—Auxiliary Faculty of Medicine.—The first course of lectures, it is announced, will commence on Monday, April 2d, and continue until the last of June. The lectures will be free to all the students of the University; to others the fee for the full course will be $35; for either ticket alone $10.

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New Hampshire Medical Institution—Dartmouth College.—At the annual commencement of this Institution, held on the 1st of November last, the degree of M. D. was conferred on 24 candidates.

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Berkshire Medical College.—At the commencement of this school, held on the 8th of November last, the degree of M. D. was conferred on 18 candidates.

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University of Michigan.—Prof. S. G. Armor writes us that "The class attending the present course of lectures in the Medical Department of the University of Michigan numbers 450—a fraction over. This is the largest class that has been assembled west of the mountains.

"The University of Michigan, the oldest State University in the country, was opened as a college in 1841. The Department of Medicine and Surgery was opened in 1850, and is now among the largest medical schools in the country. It employs ten

professors and instructors, and has a six months' term."

—

American Pharmaceutical Association.—This very active and useful Association held its annual meeting in Boston in September last. It is stated in the *American Journal of Pharmacy* that "the spirit with which the sessions were animated, the full attendance, and the large number of new members, all rendered it one of the most successful gatherings that have taken place." From the abstract of the proceedings given in the journal just referred to, it is manifest that a large amount of important business was transacted. This association has done much to advance the science of Pharmacy in this country and to elevate the standing of its cultivators.

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New Orleans Medical Journal.—Dr. Bennet Dowler has issued proposals for the publication of a journal under this name. It is to be a bi-monthly of 104 pages, at $5 a year, in advance, and to be issued early in 1866, if sufficiently patronized. Dr. D. is a hard worker and a zealous student, and his efforts to advance our science deserve encouragement.

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Desormeaux's Monograph on the Endoscope.—We are pleased to announce that Drs. John C. Octerlony and Coleman Rogers, of Louisville, Ky., have in preparation a translation of this interesting work.

FOREIGN INTELLIGENCE.

Compression in Aneurism.—A discussion on this subject lately took place at the Parisian Surgical Society, *apropos* of a successful case of M. Legouest. A man, in 1863, with popliteal aneurism, was subjected to digital pressure without success. A second time, at Lisle, he was subjected for sixty hours to the same treatment, and also unsuccessfully. The patient, wearied, remained for two years without further treatment; but as the pain then increased, he, in July last, entered Val-de-Grâce under M Legouest. He then had a popliteal aneurism of the size of an egg, with thick and regular walls. M. Legouest at once employed M. Broca's compressor from July 24th to August 11th, when it was removed on account of the intolerable pain and other mischief produced. The tumour seemed increased in size, hardness, and pulsation. M. Legouest then resorted to digital compression, continued, and as perfect as possible. From fifteen to twenty assistants relieved each other, commencing at 8 A.M. on the 11th and continuing steadily at work up to 9 A.M. of the 12th. The pulsation of the tumour ceased, and has not returned, and there now only remains a hard tumour. M. Legouest said, that compression had been abandoned by surgeons, because it was so simple and afforded no gratification to the vanity of the operator; a remark which was loudly protested against. M. Marjolin said, that he had never noticed any of the great pain attending digital compression alluded to by M Legouest. M. Desormeaux said that he should like to see the other side of the medal, the unsuccessful cases. He had himself had a case of popliteal aneurism, in which digital pressure had produced gangrene and death. M. Velpeau thought that digital compression was neither difficult nor dangerous. It was not necessary to keep up the pressure continuously for twenty-four, thirty-six, or forty-eight hours; it might be left off for an hour or two every five hours. Nor was there any necessity for employing a company or battalion of assistants, as M. Legouest had done. He had cured several cases in this way, varying the mode of compression. He had no doubt that in due time we should employ pressure only in the cure of aneurism, and never resort to the ligature, which is always dangerous.—*Brit. Med. Journ.*, Sept. 23, 1865.

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Diabetes.—Dr. Buttura relates to the Academy of Sciences (through M. Bernard), a case of diabetes cured by the application of a seton to the neck. A mason, 38 years of age, had long suffered from the disease; he was very wasted and feeble, his thirst was extreme, and his urine abundant. The different usual methods of cure were tried in vain; and at the end of eight months trial of them, a large seton was put in his neck. When suppuration was established, the sugar in the urine gradually diminished. At the end of six months, not a trace of sugar could be found. The man returned to his work; and now for a year has remained perfectly well.—*Ibid.*

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Death from Chloroform.—The *Liverpool Mercury* gives the inquest held on a child

aged about two years, which had died from chloroform administered for the removal of a finger. About thirty drops were placed on lint over the child's mouth for about two minutes. The child died in about five minutes after the commencement of the inhalation. The jury's verdict was: Died from the effects of chloroform by misadventure. No blame was attached to either Dr Sinclair or Mr. Prytherch.—*Brit. Med. Journ.*, June 24, 1865.

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Endermic Poisoning by Belladonna.—The application of belladonna to the breasts for the relief of painful distension of the organs, especially after sudden weaning, is often resorted to and with advantage Where there is an abrasion of the skin, however, this practice, it should be known, is not devoid of danger. A case of poisoning under such circumstances is recorded in a recent number of the *Lancet*, Nov. 11, 1865.

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Vaccine Matter from the Cow.—It will be recollected that at the Medical Congress at Lyons last year, Professor Palasciano, of Naples, gave an interesting account of the practice of vaccinating from the cow followed at Naples for the last sixty years. At that time a kind of panic prevailed in France respecting transmission of syphilis through the medium of vaccine lymph, and the Neapolitan plan was warmly welcomed as offering an effectual preventive to such a disaster. Cows were accordingly vaccinated in Lyon and Paris; but as we have heard nothing whatever of late of the plan being pursued we suppose that either practical difficulties or a suspicion that great exaggeration had prevailed concerning the evils attendant upon the ordinary mode of vaccination have prevented its being continued. However this may be, the Prussian Government, having had its attention drawn to the matter, has caused a report to be prepared, of which Dr. Müller gives an account in a recent number of the *Berlin Med. Wochenschrift*. It seems that a Dr. Galbiati commenced the practice of vaccinating directly from the cow at Naples sixty years ago, and that it has been regularly continued from that time by Signors Feola and Negri. From the years 1849 to 1859, the cows employed were the property of the King, who had his own family vaccinated in this manner; but since then Negri has conducted the vaccinations as a private speculation, charging 5 francs for bringing the cow and vaccinating the child at its parents' residence. The generation of the vaccine pustules does not seem to injure the cow, but the udders, upon which are often from 80 to 100 pustules, are so much damaged that the animal is usually slaughtered, the price obtained for it going towards covering the expenses. It is remarkable, however, that this mode of vaccination does not seem to have become, even after so long a period, very popular in Naples, although warmly supported by influential persons, the ordinary vaccinations being performed just as in other countries, the employment of Negri's cows being confined to the richer persons and the revaccination of a portion of the army.

Some of the Neapolitan lymph having been forwarded to Berlin, Dr. Müller made some comparative experiments with it and with lymph derived from other sources, and found the results identical. He also vaccinated some cows and calves with the lymph, generally producing true vaccine pustules, which attained their full development by the sixth or seventh day. They were, however, far from containing the quantity of lymph stated by Negri to be produced, this not running out after the separation of the scab, as is usually the case in the human pustule, so that the glass tubes were filled only with difficulty. This lymph produced true pustules in some children, while in others it did not succeed. The milk of the cows submitted to the process diminished in quantity, and the animals became emaciated. Alarmed also, they offered much resistance to both the inoculation and abstraction of the lymph; so that it is evident that Negri's cows must furnish a larger supply of lymph, and belong to a quieter race, or he must be much more expert in their management, to enable him to take them to the patients' houses for the small sum of five francs. However, the trials made establish the possibility of vaccinating direct from the cow in all cases, but they also show that it is neither an easy or cheap process. After all, is there any great advantage in substituting this mode of proceeding for that from arm-to-arm vaccination? and is there not at least as much danger of transplanting diseases of the cow as of conveying syphilitic poison, especially as the best and most robust cows would

naturally not be those employed for this purpose?—*Med. Times and Gaz.*, Oct. 28, 1865.

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Trichinæ.—Prof. Virchow, in his *Essay on Trichinæ*, says, that the most careful cooking is required to destroy the trichinæ in fresh meat; that salt has a very destructive effect on the parasites; and that ten days of salting will effectually destroy them Hams, sausages, etc., should not be eaten fresh; but should be kept a long time before being used.—*Brit. Med. Journ.*, July 22, 1865.

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Ventilation of Hospitals.—Dr. Gallard of La Pitié, who has lately paid much attention to the ventilation of hospitals, has arrived at the conclusion that *natural* is far superior to *artificial* ventilation. At Hôpital Beaujon, he says, has been in operation since 1856 Van Hecke's system of ventilation in the female surgical pavilion of that hospital; and yet statistics show that the mortality has, if anything, increased. In 1851, there was one death to 17.16 patients treated; in 1852, one to 16.26; in 1853, one to 14 48; in 1854, one to 13 81; in 1855, one to 16 23; in 1856, one to 14.25; in 1857, one to 14.93; in 1858, one to 12.85; in 1859, one to 17.14; in 1860, one to 12; in 1861, one to 11 60; in 1862, one to 12.30. At Hôpital Necker, where the same apparatus is in operation, the mortality has remained precisely as it previously was—viz., one in eight or nine patients. Then, again, we find still more striking results if we compare the mortality of La Pitié, where there is no artificial ventilation, with that of Lariboisière, where the most expensive system prevails. Lariboisière nominally contains 606 beds, but its average number is 634. La Pitié contains 620. Lariboisière is placed on a height, and stands in an open space. La Pitié is placed low; has muddy waters, tanneries, etc., around it; its superficial area is 21.7 *mètres*. Lariboisière has 51.8 *mètres*; its beds have each 52 to 53 cubic *mètres*, whilst those of La Pitié have from 25 to 49 only. These and other circumstances place La Pitié in a hygienic position greatly inferior to that of Lariboisière. And we should naturally be led to conclude that the mortality of La Pitié was greatest; but such was not the case. We find from statistical comparison of the mortality at the two hospitals since 1858, when Lariboisière was opened, that the mortality in both was much the same. During eleven years, Lariboisière has received 100,718 patients, of whom 12,616, or one in 7.9, died; whilst La Pitié received 103,707, of whom 13,189. or one in 7.8, died. Facts like these, M. Gallard contends, show that artificial systems of ventilation of hospitals are, to say the least of them, useless. Then, again, it appears that during these years, in which statistics were taken, the average duration of diseases in Lariboisière is about two days longer than in La Pitié. It is needless to add, that the expense attending artificial ventilation is great. M. Gallard has often noticed an inconveniently high temperature in wards artificially ventilated. In Lariboisière, where the ventilator of Farcot is employed, the temperature is generally about 17° to 18° cent., and sometimes even above 20°, when 15° or 16° should have been the maximum. The original expenditure on the ventilating apparatus at Lariboisière was upwards of £16,000; and every year the expense of heating the hospital is more than £3,000, whilst that of La Pitié costs only £1,000.—*Brit. Med. Journ.*, Sept. 23, 1865.

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Ventilation of Sewers.—M. Robinet, a French chemist, has devised a means of freeing the sewers from the effluvia which escape in the attempt to ventilate them. He proposes that the furnaces of factories shall derive their supply of air from the sewers. The gases will be destroyed by combustion, fresh air from the atmosphere supplying their place. He calculates that if the combustion of only 70,000 tons of coal can thus be economized annually in Paris, or only a tenth part of what is burned there, the sewers will be supplied with about 140,000.000 cubic feet of fresh air—that is, more than seven times their contents—daily. He would apply the same principle to the ventilation of cesspools, etc. It has been partially in use already, on the small scale.—*Scientific Review.*

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Pharaoh's Serpents.—Now that these amusing and scientific toys are in such extensive demand, it is right that their nature and composition should be made generally known, with a view to determine whether their employment is compatible with safety, or whether the products of their combustion are detrimental to health. These toys

consist of sulphocyanide of mercury, a compound, as the name implies, of sulphur, cyanogen, and mercury, the whole of which substances are volatilized by heat, each of them, during combustion, producing a number of more or less injurious and even poisonous products. The sulphur is, for the most part, converted into sulphurous and sulphuric acids, gases of an extremely irritating and suffocating character. The cyanogen, a highly poisonous substance, is partly volatilized unchanged, and is partly decomposed, evolving carbonic acid, nitrogen, and also, by its union with a portion of the sulphur, giving rise to the formation of the very deleterious vapour of bisulphide of carbon, while a portion of it is converted into the organic substance, termed mellon, and which constitutes, in fact, the chief residuary constituent of the so-called serpents; while, lastly, the mercury is sublimed in the state of vapour. Such being the injurious and poisonous nature of the gases evolved, it is very necessary that persons with delicate lungs, or suffering with any disease of those organs, should be most careful not to inhale the products of the combustion of the "serpent's eggs;" and in all cases great care should be taken that the room in which these toys are burned be freely ventilated. So satisfied are the authorities in Prussia of their deleterious properties, that the Government has forbidden their sale except by persons who are specially authorized to sell poisons.—*Lancet*, Nov. 18 1865.

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Irish Lunatics.—By a return issued a few days ago it appears that in the year 1864 there were committed to county gaols in Ireland 460 dangerous male lunatics, and 292 females—752 in all. The number of insane persons confined in distinct asylums in the same year was 5914; while the total number of persons which such asylums are capable of accommodating is only 4959.—*Brit. Med. Journ*, June 24, 1865.

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Lunacy in Scotland.—The seventh annual report of the Commissioners on Lunacy for Scotland has just been issued. The number of insane persons in Scotland on January 1st, 1864, of whom the commissioners had official cognizance, was 6,391. Of this total 1 039 were supported by private means, 5,320 by parochial rates, and 32 were criminal lunatics in the Central Prison at Perth. The statistics of the seven years ending January 1st, 1864, show on the whole much steadiness in the extent and distribution of lunacy, with latterly some tendency towards diminution in most counties. On comparing the mortality of private and pauper patients, the commissioners find the ratio to be nearly alike on both sides.—*Ibid.*

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Smallpox in Berlin.—The *Berliner Klinische Wochenschrift* contains a statistical account of an epidemic of smallpox which prevailed in Berlin during 1864. In 1863, there were 1270 cases, of which 223 were fatal. During the first half of 1864, the disease became more frequent; the number of cases increasing from 227 in January to 644 in May and 628 in June. In July the number fell to 323, and in August to 150; after which it diminished to 55 in November, again rising to 77 in December. The total number of cases in the year amounted to 3,319; of which 617, or 18.5 per cent., died. Of the total cases, 1,590 were males, of whom 313 died; and 1,729 females, of whom 304 died. With regard to age, the results were the following:—

Under 10 years		854 cases	356 deaths, or 41.6 pr. ct.	
From 10 to	20	320	10	3.1
20	30	794	47	5.9
30	40	678	65	9.5
40	50	433	73	16 8
50	60	192	52	27
60	70	40	13	32.5
70	80	7	1	14
80	90	1	0	

Among children under 15 years, there were 976 cases, of which 360, or 36 per cent., died; among persons above 15, the number of cases was 2,343, and of deaths 257, or 10 per cent. Of vaccinated persons attacked, there were 2,719, of whom 310, or 11 per cent., died; viz., 413 children, with a mortality of 63, or 15 per cent., and 2,306 adults, of whom 247, or 10 per cent., died. Of the unvaccinated the number was 600, of whom 307, or 51 per cent., died; there being in this category 563 children with a mortality of 297, or 52 per cent., and 37 adults with a mortality of 10, or 27 per cent. Among revaccinated persons the number of cases was 168, and of deaths 16, or 9 per cent. On these statistics, the reporter in the *Berlin. Klin. Wochenschr.* remarks, that the mortality among vaccinated persons was really smaller than appears From inquiries extending over several months, it was found that,

when death from smallpox occurred in children said to have been vaccinated, the operation had either not been performed, or had been done unsuccessfully, or only a few days before the attack of smallpox. Not a single death occurred among children who had been properly vaccinated.—*Brit Med. Journ.*, Sept. 16, 1865.

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Smallpox in Calcutta.—During the latter part of 1864 and the early months of the present year, smallpox prevailed extensively in Calcutta and other parts of India. For the reception of cases occurring in Calcutta, a temporary hospital, consisting of a bungalow and sheds, was established at Chitpore, in the neighbourhood of that city, and placed under the care of Dr. Chuckerbutty. An elaborate report of that hospital from the 23d December, 1864, to 13th April, 1865, drawn up by Dr. Chuckerbutty and presented to the Bengal Government, is before us. During the period embraced within the report, there were 627 patients admitted with smallpox, of whom 249, or 39 7 per cent., died.[1] The cases were thus distributed. Among Europeans there were 188 males, of whom 51, or 27 per cent, died; and 23 females, the deaths among whom were 5, or 21.7 per cent. Of native patients there were 317 males, with a mortality of 134. or 42.7 per cent.; and 99 females, of whom died 59, or 59.5 per cent. The percentage mortality among Europeans was thus 26.5; and among natives 46.4 As regards age, there were:—

Under 5 years	37 cases	11 deaths	or 26.8 per ct.
10	30	7	
15	33	2	6
20	126	48	38
30	310	142	45.8
40	69	31	44.9
50	15	6	40
60	6	2	33.3
70	1	0	

There were thus 100 cases in children under 15 years of age, of whom 20 died; and 527 in adults, of whom died 229, or 43.4 per cent. The average daily number of admissions during the first seven weeks was 5 3, and of deaths 1.3; in the next four weeks, the daily admissions averaged 7 9, and the deaths 4 14; and the next five weeks the daily averages were 4 and 2. As regards vaccination, the tables contained in the report show that 354 cases and 185 deaths occurred among those unprotected by vaccination; 27 patients were vaccinated too late to prevent the occurrence of smallpox, but none died; 12 had been vaccinated twice, of whom none died; 148 had been vaccinated once, of whom 43 died. The disease appeared in 65 native patients who had been inoculated, and of those 20 died. In 20 patients, the attack was not the first; and 6 of these had also been vaccinated. The majority of the cases—555—were of the confluent form of smallpox; and the deaths among these were 245, or 44 per cent. There was generally much prostration, requiring the free use of stimulants. Bathing, according to Dr. Chuckerbutty, was a very important adjunct to the treatment; and the proximity of the hospital to the river afforded opportunities for this.

"As a rule, every patient was bathed as soon as the eruption began to desiccate, and the bathing was repeated at intervals during the whole convalescence. The effect of this practice was truly marvellous. Patients who seemed to be on the very point of expiring always survived under the agency of the tepid bath. . . . . Many of course died, but none within twelve hours of the bath, and so not in any way to be laid to its account. . . . . Patients of all classes, both Europeans and natives, the moment they were able to walk, preferred to go into the river and bathe in the running stream; so I had them sent down in batches with the ward-master and some coolies to prevent accident. This I found to be very beneficial; for the skin seemed to clean itself under this much faster than it would have done under any other plan."

In another part of the report, he says that the pitting of the skin has been far less than he could have expected, and that he attributes this to the free and early use of baths. Where bathing could not be used, washing of the patient was employed, and was a source of much comfort. Dr. Chuckerbutty is so convinced of the utility of bathing, and of the necessity of frequently washing the patients' clothes, etc., that he expresses an opinion that "smallpox hospitals should always be placed in close proximity to an abundant supply of running water." After making in the report a number of remarks on the establishment, accommodations, furniture, etc., of the hos-

[1] At the final closure of the hospital on June 8th, the total number were as follows: admissions, 690; deaths, 264; recoveries, 426. The percentage of deaths was 38.26.

pital, the localities whence the patients came, the symptoms and characteristics of the disease, its complications and sequelæ, and other matters, he concludes with advising the establishment of a permanent smallpox hospital for Calcutta, in order to avoid the inconvenience and expense attending the formation of temporary hospitals. He advises the permanent retention of the hospital at Chitpore, with such additions as may be necessary; and suggests that, when smallpox is not prevailing, it may be used as a cholera hospital, for the reception of cholera cases, by which other hospitals of the town are dangerously overcrowded.—*Ibid.*

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An Operation for Fistula in Ano Two Hundred Years Ago.—M. Le Roi, in his *Curiosités Historiques*, gives the following interesting account of a "grand operation" performed on Louis XIV:—

On the 18th of November, 1686, Versailles was astounded with the news that Louis XIV. had undergone the "*grande opération*," as it was then called, for fistula *in ano*. An abscess at the margin of the anus of the king had been discovered in February, 1686; and Félix de Tassy, his chief surgeon, at once proposed to open it. But, as Dionis remarks, "the deference to opinion necessary for a cure is not always found among the great." A thousand *infallible* remedies were immediately proposed; and of these, a plaster made by Madame de la Daubière was selected as preferable to the lancet of the surgeon; and madame herself, as the chronicle tells us, assisted in its application. The plaster, however, was removed five days later, having only increased the king's sufferings; and it was at last resolved, on the 23d, that the abscess should be opened. But, contrary to the wishes of Félix, caustic was used for the purpose, instead of the knife. The result was that, when the caustic slough fell off, "the pus ran out of a small hole." Soon afterwards it was discovered that the fistula communicated with the interior of the gut; and an operation for its cure was therefore necessary.

Hereupon the king was again overwhelmed with the promises of infallible curers of *tumours*. Louvois, the minister, however, being in some sense responsible for the life of the king, would not allow any of their remedies to be applied to the king without having them previously tried on others. Thus, for example, the use of the waters at Barèges having been recommended, and having taken the fancy of the king himself, four persons with fistula were sent to Barèges, under the charge of Gervais, surgeon of La Charité, who had a great reputation in the cure of tumours. They were treated in a variety of ways, internally and externally, with the waters, for a long time; but the result was, says Dionis, that at the end they were no nearer a cure than when they started for Barèges. Next came a court lady, who reported that she had been cured of a fistula at the waters of Bourbon. Consequently four other patients with fistula were sent there, under one of the king's surgeons; but they also returned uncured. Still Louvois was besieged with promises of a cure; and, not wishing to throw away a chance, had several rooms in his ministerial hotel at Versailles fitted up for the reception of all fistula *in ano* patients who were willing to have remedies tried upon them. Félix was to watch the action of the remedies, and to report upon them. The experiments were carried on for a length of time; but all the *infallible* waters, ointments, etc., turned out complete failures.

Of all these proceedings the king was informed by Louvois and Félix, who urged upon him that all attempts to cure the fistula without operation were in vain. Before finally deciding, the king sent for Bessières, who was then in great repute at Paris; and by him was told that "all the remedies in the world would do nothing without an operation." Thereupon the king determined to undergo the operation. But *what* operation? At that time there lived at Paris one Lemoyne, who had great repute as a curer of fistula. Of him Dionis writes:—

"His method consists in the use of a caustic, spread over a little plug, and introduced into the opening; this plug is enlarged day by day, so as to destroy all callosities and sinuses. By this process, and with plenty of patience, he cured many fistulæ. He died old and rich; and he made the people pay well; and in this he was right, as the public only esteem those things which cost them dear. All patients who dreaded cutting fell into his hands; and, as the number of cowards (*poltrons*) is always great, he never wanted for practice."

The ligature was the plan most in use; but Félix preferred the knife. Félix, therefore, was called upon to describe to the king the entire history of these different remedies. Caustic, he told him, produced continual pain for five or six weeks. The ligature required a long time to cut its way through, and also needed frequent tightening, and so constantly produced pain. The pain of incision was, he admitted, sharper, but then it was only for a moment; and the cure for incision was certain and rapid, and this could not be said of either the caustic or the ligature. Félix's arguments, supported by those of d'Aquin, Fagon, and Bessières, decided the king for incision. Félix was a bold man; for at that time the operation by the knife was looked upon as a great and terrible affair. But Félix was not an ordinary man. He was the son of the king's surgeon, Félix de Tassy; had been carefully educated by his father, in hopes that he would become his successor; and at an early age was celebrated as a skilful surgeon. In 1676 he, in fact, became first surgeon of the king. Félix at the time had never performed the operation which he proposed to the king. But, while the experiments of the "curers" were being tried, he read everything which had been written on the subject; and, what is more, operated on all the patients having fistula *in ano* who were received into the Paris hospitals and into La Charité at Versailles. When therefore the king had at length resolved upon the operation, Félix had become a master in its performance.

Félix used a modification of Galen's syringotome. It was a very narrow curved knife, terminated by a stylet several inches long. The cutting part of the blade was covered with a silver sheath. This instrument was introduced through the fistula into the rectum, and then brought out at the anus. The sheath was then gently withdrawn; and the knife, now laid bare, held by the hand and by its stylet end, was at once made to cut its way out. This knife received the name of the *Royal Bistoury*.

The operation was performed on November 18th, 1686. The king had kept his intention a secret. He came to Versailles on the 15th; and on the 17th he rode out publicly on horseback. On the 18th, at five o'clock in the morning, the apothecaries administered a lavement. A little before seven, Louvois brought Madame de Maintenon to the king, who was found engaged with Père de la Chaise, his confessor. In the Cabinet des Bassans were assembled Félix, d'Aquin, the king's chief physician, Fagon, Bessières, the four royal apothecaries, and Laraye, Félix's pupil. At seven o'clock they entered the king's room. Louis XIV. made Félix show and explain to him the instrument, etc.; and then with perfect confidence, and most composedly (as we are assured), placed himself in Félix's hands. The operation was performed in the manner above indicated; and then, with eight cuts of scissors, Félix removed the callosities which were exposed when the incision was made. Louis bore the operation without a cry or a word. A large plug of charpie, covered with oil and yolk of egg, was then forced into the wound.

Consternation seized all the courtiers when they heard that the king had undergone this *dangerous* operation. For the first few days afterwards, things went on well; but, on December 7th, it was found necessary to destroy the new cicatrix, and to lay bare the fistula to its base. After this second proceeding, the operation succeeded.

Félix was well rewarded. His fee was 50,000 crowns, and the estate of Mouhineaux, estimated at a like value. D'Aquin received 100,000 *livres;* Fagon, 80,000 *livres;* the four apothecaries, each 12 000 *livres;* and the pupil Leraye (who was not forgotten), 400 *pistoles*—the sum paid amounting altogether to about £40,000! Félix's practice now naturally became very large; for, as Dionis says:—

"Fistula *in ano* has become a fashionable disease since the operation was practised on the king. Those who had before, through shame, concealed the disease, now made it public; and many went to Versailles to undergo the operation, because they knew that the king made inquiries about all operations of the kind. Some even, who had simply hæmorrhoids, or a slight discharge, were angry when they were told there was no necessity for an operation."

"Such," says M. Le Roi, "is the history of the operation performed on Louis XIV. Thanks to the happy initiative of Félix, the method of operating by incision was again brought into honour, and has since been generally adopted. A man, indeed, may now a days successfully practise the operation without being first surgeon of the king—

so simple has the operation become."—*Brit. Med. Journ.*, Sept. 23, 1865.

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Fictitious Spirits.—A few instances have been discovered of the sale of drinks under the names of "Indianna brandee," "medicated whiskee," "pure Islay mountain," "Indian tincture," and "red currant cough elixir," the exciting principle of all of which was found to be hyponitrous ether prepared from methylated spirit. The above compounds were all highly stimulating, and it would appear that they are consumed by some of the poor, because they produce intoxication at the cost of only a few pence, while there are good reasons for believing that hyponitrous ether itself, and in some parts of Ireland even sulphuric ether, are used by the needy classes for the same object. It is difficult to see how this evil, so pernicious to the moral and physical welfare of those who indulge in it, can be checked as the substances under consideration possess more the character of medicines than of ordinary spirits, and may thus be legally kept and sold by any chemist. In such cases all that can be done is to cry, "Buyer, beware,"—*Inland Revenue Report.*

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Ovariotomy in Paris.—M. Labbe, a hospital surgeon of Paris, presented to the Surgical Society, Oct. 17, a woman aged 29 upon whom he had performed ovariotomy three months before. Her health was now perfect.

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Honours to French Physicians.—The Emperor of the French has conferred the insignia of the Legion of Honour on the house physicians of the Paris Hospitals, who have shown great devotion in their attendance on the cholera patients admitted during the present epidemic prevalence of that disease.

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Literary Men and Doctors.—It is pleasant to record the fact that nearly every literary man and woman with whom I have been acquainted, or whose lives I have looked into, has found a generous and disinterested friend in a doctor. I could, of my own knowledge, tell many anecdotes of the sacrifices made to mercy by members of the profession; of continuous labours without a thought of recompense; of anxious days and nights by sick and dying beds, without the remotest idea of "fees." I may tell one of a doctor, now himself gone home; it was related to me by Sir James Eyre, M D. Unfortunately I have forgotten the name of the good physician, but there are, no doubt, many to whom the story will apply. Sir James called upon him one morning, when his career was but commencing, and saw his waiting-room thronged with patients. "Why," said he, "you must be getting on famously." "Well, I suppose I am," was the answer; "but let me tell this fact to *you*. This morning I have seen eight patients; six of them gave me nothing, the seventh gave me a guinea, which I have just given to the eighth." Such a physician Providence sent to Thomas Hood.—S. C. Hall's *Biography of T. Hood.*

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English Hospital in Paris.—The Messrs. Galignani have built and endowed a hospital of twenty-five beds for the English poor residing in Paris. It is placed under the direction of an English sister of charity, and two English surgeons give gratuitous attendance. The property has been made over to the English Ambassador by the founders.

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Therapeutic Action of Sulphites.—Signor Giovanni Ferrini, who has been experimenting upon the action of sulphites, concludes that, as periodic fevers are the expression of a morbid fermentation of the blood, sulphites may be employed in such cases with advantage. Indeed, he believes that they may almost be substituted for quinine. In typhoid fever, according to his observations, sulphites appear to arrest the process of disorganization of the blood; in five cases they were employed with perfect success even when the symptoms were severe. Signor Ferrini states that in a case of hectic fever in a phthisical patient the administration of sulphites removed the fever and prolonged life for a considerable period.—*Lancet*, Nov 25, 1865.

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Godard Prize.—The Anatomical Society of Paris has awarded this prize to M. J. V. Laborde, of Paris, for his memoir, bearing the following title:—

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2. The secondary alterations of the muscles in the same disease—a kind of muscular atrophy, not hitherto described.

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The writings of Wilson, upon diseases of the skin, are by far the most scientific and practical that have ever been presented to the medical world on this subject. The present edition is a great improvement on all it predecessors To dwell upon all the great merits and high claims of the work before us, *seriatim*, would indeed be an agreeable service; it would be a mental homage which we could freely offer, but we should thus occupy an undue amount of space in this *Journal.* We will, however, look at some of the more salient points with which it abounds, and which make it incomparably superior in excellence to all other treatises on the subject of dermatology. No mere speculative views are allowed a place in this volume, which, without a doubt, will, for a very long period, be acknowledged as the chief standard work on Dermatology. The principles of an enlightened and rational therapeia are introduced on every appropriate occasion. The general practitioner and surgeon who, peradventure, may have for years regarded cutaneous maladies as scarcely worthy their attention, because, forsooth, they are not fatal in their tendency; or who, if they have attempted their cure, have followed the blind guidance of empiricism, will almost assuredly be aroused to a new and becoming interest in this department of practice, through the inspiring agency of this book.—*Am. Journ. Med. Sciences*, Oct. 1857.

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As a practical guide to the classification, diagnosis, and treatment of the diseases of the skin, the book is complete. We know nothing, considered in this aspect, better in our language; it is a safe authority on all the ordinary matters which, in this range of diseases, engage the practitioner's attention, and possesses the high quality—unknown, we believe, to every older manual, of being on a level with science's high-water mark; a sound book of practice.—*London Med. Times.*

No matter what other treatises may be in the library of the medical attendant, he needs the clear and suggestive counsels of Wilson, who is thoroughly posted up on all subjects connected with cutaneous pathology. We have, it is very true, other valuable works on the maladies that invade the skin; but compared with the volume under consideration, they are certainly to be regarded as inferior lights in guiding the judgment of the medical man.—*Boston Med. and Surgical Journal*, Oct. 1857.

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CHOLERA.

Notes on the Pathology and Treatment of Cholera. By GEORGE JOHNSON, M. D., F. R. C. P., Professor of Medicine in King's College, etc. (Continued from p. 4.)

We have shown that two classes of facts stand in bold opposition to the theory that the collapse of cholera is due to a drain of liquid from the blood. We have seen that there is no such direct relation between the degree of collapse and the amount of liquid discharged from the blood as must exist if the hypothesis in question were true. We have also seen that the symptoms of collapse differ essentially from those which an excessive drain of fluid from the blood is known to produce. We have now to inquire *whether the effect of various and opposite modes of treatment upon the symptoms of collapse affords support to the theory that a drain of liquid from the blood is the essential or the chief cause of that condition.*

The effect of alcoholic stimulants.—The condition of a patient in collapse—cold and pulseless, and apparently exhausted—is one which naturally suggests the use of stimulants. Any one who has witnessed the speedy improvement in the pulse and other symptoms, which usually follow the administration of wine or brandy to a patient who is fainting from loss of blood or exhausted by excessive purging, might reasonably expect to obtain similar results from the same means in the collapse of cholera. Accordingly, stimulants have been given, and given freely and boldly; and the result has been a very general conviction that in the stage of collapse they are not only useless, but positively injurious. Again and again have I seen a patient grow colder, and his pulse diminish in volume and power, after a dose of brandy, and apparently as a direct result of the brandy. Dr. Gull (*Report on the Morbid Anatomy and Pathology of Cholera*, p. 185) states that, "although opium

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and diffusible stimuli—brandy, camphor, and ammonia—were useful at an early stage of the disease, as collapse set in, they not only failed to produce any favourable result, but often aggravated the symptoms."

Dr. Paine, who has given an admirable description of cholera and its treatment in 1832, writes thus of stimulants (*Letters on Cholera Asphyxia as it has appeared in New York*, p. 42): "We have seen no benefit from their liberal use, and it is even doubtful whether they contribute much in any quantities. It requires the conviction of experience, however, to enable us to abstain from their use, and to resist the impulse to apply them to the dying spark."

The very general conviction as to the worse than uselessness of alcoholic stimulants in the collapse of cholera is the more to be relied upon, inasmuch as it has been forced upon men's minds in opposition to preconceived notions and prevailing theories. The action of stimulants in the collapse of cholera being obviously very different from their influence upon patients who have been exhausted by the loss of blood-constituents, we infer that syncope and choleraic collapse are pathological conditions essentially different; and this conclusion is confirmed in a most striking manner by the effect of other modes of treatment.

The effect of venesection on the symptoms of collapse.—It is scarcely necessary to assert that no sane practitioner would think of abstracting blood from a patient who has been reduced to a state bordering on syncope by any of the common sources of exhaustion which have before been referred to. It is obvious that the loss of blood in such cases might be attended with perilous and even fatal results. But what has been the effect of venesection in not one or two, but in a large number of cases of cholera, and in the hands of many different practitioners? Has the effect of this treatment been such as to afford support to the theory that collapse results from loss of liquid? or has it been to add to the cumulative evidence which stands opposed to that theory? We will endeavour now to answer these questions.

It is in the writings of the Indian practitioners that the largest amount of evidence is to be obtained as to the influence of bloodletting in cholera. Scott makes the following remarks on this subject (*Report on Epidemic Cho[illegible], p. lviii.*): "The abstraction of blood, unless as an antispasmodic, is a remedy so little indicated by the usual symptoms of cholera, that its employment in the cure of this fatal disease has afforded a signal triumph to the medical art. It requires no common effort of reasoning or reflection to arrive at the conclusion that, when the powers of life appear to be depressed to the lowest degree, the pulsation of the heart all but extinct, the natural heat of the body gone, and the functions of the system suspended and incapable of being revived by the strongest stimulants, the abstraction of blood might yet prove a remedy against a train of symptoms so desperate." "Few remedies," he says, "on a fair trial, have been more generally and unequivocally advocated than free bloodletting; and the most that has been urged against it is, that it is not always successful." He then quotes reports from medical officers furnishing very striking testimony as to the benefit of bleeding in cases of extreme collapse.

Annesley states (quoted by Scott, p. lx.) "In place of syncope being produced by bleeding, in the cases which I have treated, the pulse has invariably improved, and the feelings of faintness and debility disappeared."

Bell makes the following statement (*Treatise on Cholera Asphyxia*, p. 118): "The effect of bloodletting would indeed sometimes appear almost miraculous. A patient will be brought in on a cot, unable to move a limb, and but that he can speak and breathe, having the character, both to touch and sight, of a corpse, yet will he, by free venesection alone, be rendered, in the course of half an hour, able to walk home with his friends."

Rogers gives the following description of the effects of venesection by a medical man who was himself the patient (*Reports on Asiatic Cholera in Regiments of the Madras Army*, by Samuel Rogers, p. 259): "There was a sensation which I am at a loss to describe, as if my heart was ceasing to beat, and a dread of suffocation; this sensation was instantly relieved by bleeding, and I recovered immediately."

The following striking case is recorded by Sir Ranald Martin (*The Influence of Tropical Climates on European Constitutions*, 6th ed., p 349): "On visiting my hospital in the morning, the European

farrier-major was reported to be dying of cholera. I found that during the night he had been drained of all the fluid portion of his blood. His appearance was surprisingly altered; his respiration was oppressed; the countenance sunk and livid; the circulation flagging in the extremities. I opened a vein in each arm, but it was long ere I could obtain anything but trickling of dark treacly matter. At length the blood flowed; and by degrees its darkness was exchanged for more of the hue of nature. The farrier was not of robust health; but I bled him largely, when he, whom but a moment before I thought a dying man, stood up and exclaimed, 'Sir, you have made a new man of me.' He is still alive and well."

Now let me ask, is it possible to reconcile facts of this kind with the theory that the collapse of cholera results from a loss of the liquid constituents of the blood? If Sir R. Martin's hypothetical statement, that his patient "had been drained of all the fluid portion of his blood," were an accurate expression of facts, can we conceive it possible that he could have "made a new man" of him by abstracting largely the blood which remained in the vessels? I maintain that the numerous well authenticated instances of great and immediate and permanent relief by means of venesection in the collapse stage of cholera, are utterly and hopelessly irreconcilable with the hypothesis in question.

The influence of purgatives.—If the symptoms of collapse were due to the drain of liquid from the blood, and its escape by the intestinal canal, it would seem to be impossible that the symptoms of collapse should pass away while the drain of liquid by vomiting and purging is continually going on. It would seem, too, that the action of purgatives during the stage of collapse must greatly increase the mortality. I do not here propose to consider the merits of the purgative plan of treatment. I wish only to refer to the indisputable fact that there are on record numerous well authenticated instances of recovery from extreme collapse, while the intestinal discharges were encouraged by repeated doses of emetic and purgative medicine. And, further, I challenge the advocates of the theory which I am endeavouring to refute to refer to a single case of recovery from collapse in which the intestinal discharges have not continued, in a greater or less degree, while the symptoms of collapse were passing off. If the theory in question were a true theory, the cessation of the intestinal discharges must always, and of necessity, precede recovery from collapse.

During the early part of the cholera epidemic of 1849, all the cases of cholera admitted into King's College Hospital were treated by liberal doses of brandy and opium. Under this mode of treatment, the mortality was very great. The treatment was then entirely changed; brandy and opium were discontinued, and large quantities of salt and water were administered. The effect of this treatment was to excite frequent vomiting, and certainly not to check, but rather to increase, the purging; and the result was a much larger proportion of recoveries than under the previous mode of treatment. I had no share in conducting the treatment on that occasion; but I was greatly struck by the different effects of the two opposite modes of treatment. I was also deeply impressed by observing that, during that epidemic, the arrest of the purging by opiates was in several instances *followed* by the worst symptoms of collapse; and a painful question arose in my mind, whether the collapse in such cases was not a direct result of the arrest of the purging.

At the commencement of the last epidemic—that of 1854—I had arrived at the conclusion that the commonly received theory of choleraic collapse is erroneous. I had the chief charge of the hospital during the whole period of the epidemic; and I gave emetics and purgatives to all the patients who came under my care. I have since published full particulars of all my cases. I am convinced that in many instances I gave an excessive quantity of castor oil; yet the result was a mortality, to say the least, below the average mortality in cases of equal severity. During that epidemic, many cases of choleraic diarrhœa came under my observation—cases in which there were vomiting, bilious purging, and cramps. These were all treated by castor oil, without opiates. They all recovered; and not one case so treated passed into collapse. Several of the medical officers, pupils, and nurses, and a considerable number of patients who were in the hospital for other diseases, had the premonitory symptoms of cholera. All were treated in the same way, and all recovered. In contrast with this most satisfactory result

stands the fact that, during the previous epidemic of 1849, several inmates of the hospital, nurses and patients, having been seized with choleraic symptoms, and being promptly treated by opiates, passed into a state of collapse and died.

I see no way in which the facts here stated can be reconciled with the hypothesis that the worst symptoms of cholera result from the loss of liquid, and that the main object of treatment is to check the vomiting and purging.

The effect of injecting hot saline solutions into the veins.—It is well known that the injection of a hot saline fluid into the veins during the collapse of cholera has often been followed by great temporary relief. The pulse improves; the temperature rises; the countenance becomes natural; the voice recovers its strength; and, in short, all the worst symptoms speedily disappear—usually, however, to return with all their former severity within a very short time. The late Dr. Mackintosh, of Edinburgh, during the summer of 1832, injected the veins of 156 patients, of whom only twenty-five recovered. There are probably but few practitioners who now expect any practical benefit from this mode of treatment—few who would consider it right to repeat this experiment. But there are many pathologists who maintain that, since all the symptoms of collapse speedily disappear after the injection of a certain quantity of liquid into the veins, this experiment proves conclusively that the symptoms which previously existed must have resulted from the loss of a liquid similar in character to that which the operation restores to the blood. I believe, however, that the true explanation of the manner in which the hot saline injections afford the surprising temporary relief which they are acknowledged to have done, has been missed; and that, rightly interpreted, the results of this experiment afford as little support to the hypothesis that collapse depends on loss of fluid, as do the effects of other modes of treatment to which reference has already been made.

In a future communication, I will give what I believe to be the true pathology of collapse; and then I hope to explain the *modus operandi* of the saline injection into the veins.

Before attempting to give what I believe to be the true interpretation of the symptoms of cholera, I have thought it desirable to direct attention to some of the facts and arguments which are opposed to the commonly received theory. There is so much of apparent probability in the theory which explains the symptoms of collapse by the loss of the watery portion of the blood, that the practice of giving opium and other astringents to arrest the intestinal discharges will continue more or less, in spite of failure and disappointment, until it can be clearly shown that the state of collapse has an entirely different origin and cause from that which the theory in question assumes. —*Brit. Med. Journ.*, June 17, and Sept. 9, 1865.

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Cholera.—At the Academy of Sciences, M. Velpeau lately quoted the opinion of three medical men who were more or less in favour of sulphate of copper as a cure for cholera—Dr. Burq, Dr. Lisle, and Dr. de Prado; and added, that the medication in question had produced no marvellous results in Parisian hospitals. M. Chevreul offered some considerations on our actual knowledge of cholera. The cause of cholera is unknown; so also is its therapeutical treatment, or otherwise the prize Bréant would have been already adjudged by the Academy. The observations made as to the appearance of the disease in places where it is not endemic, give us, if not the certitude, at all events the great probability, that it is contagious. Assuredly the opinion that cholera is non-contagious cannot be held as demonstrated. In the mean time, it is far better for the sake of science and of the public health, to regard the disease as contagious. The physician who prescribes the isolation of cholera patients, and restriction of intercourse with persons in an infected ship, for example, subjects himself to no fear of self-reproach; but he who asserts the non-contagious theory, and places cholera patients side by side with others, *may* be the cause of fatal results. M. Guyon, who has had great experience of cholera, also spoke of its nature and treatment. Our learned and *spirituel* friend (M. Velpeau), he said, gave us a most truthful definition of the disease: "It takes a man and screws him up" ("Le mal vous prend et vous tortille"). M. Guyon views the disease as essentially spasmodic—the spasm resulting from primitive lesion of the nervous system. The heart is thus, be

tells us, the first and most deeply smitten organ. "Its spasms and abnormal contractions explain all the disorders of the circulation, and the cyanosis attending the disease. In Poland, one of my colleagues gave to the cholera the name of spasm or cramp of the heart." The alvine dejections he regards in the same light as the fluids thrown off by the skin in sweating sickness. If these dejections contain, as some affirm, morbid matters, then their expulsion should be aided. Is their scantiness in very serious cases, and their absence in "dry" cholera, to be considered as a proof of their impurity or contagiousness? At all events, whatever opinion we hold, assuredly *it is not against these olvine dejections that we should direct our medication.*

Dr. Bonnafont tells the Academy of Sciences that the only efficacious remedy for cholera is a prophylactic one.

"The cholera can only be efficaciously attacked on the great Indian peninsula, or perhaps still better in London. Therapeutics have no remedy capable of neutralizing the deadly choleraic miasm. We must therefore trust to hygiene; and hygiene furnishes us with one which is undoubtedly efficacious."

The cholera seems still to linger at Malta. Some fresh cases have also occurred at Alexandria, and, in consequence, quarantine of twenty days has been placed on arrivals at Malta from that city. In Russia, cholera has appeared; and most energetic, and it is said efficacious, measures have been taken to prevent its spread. In Paris, the cholera still lingers; and there, wisely or unwisely, the number of deaths from the disease is kept from the public. *L'Epoque* says:—

"Notwithstanding our utmost desire to keep our readers correctly informed as to the progress of the epidemic, we are unable to do so, as the administration not only refuses to communicate official returns, but has warned the newspapers that any inaccuracy in the figures they might publish would render them liable to a prosecution for false news."

The number of deaths from cholera in Paris during October last is stated at 4,020; deaths from other causes being 4,274. From the 6th to the 12th instant, the deaths from cholera are put at 272.—*Brit. Med. Journ.*, Nov. 25, 1865.

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Chlorine Fumigations in Cholera.—Dr Nonat, of La Pitié, gives statistical proofs, as he considers, of the value of chlorine fumigations in preventing the spread of cholera in a hospital. The statistics are the results of observations made during the first eight months of 1854. He gives two tables, showing the number of cholera-patients brought into La Pitié and the number of cases which arose in the hospital itself, and the number of beds under different physicians.

Cholera-Patients brought into Hospital.

	Beds, Male and female.	Number of Cholera-patients.
M. Gendrin . .	94	173
M Nonat . .	94	35
M. Valleix . .	80	31
M. Marrotte .	96	50
M. Sée . . .	82	40
M. Laugier . .	84	1
M. Michon . .	84	2

Patients seized with Cholera in the Hospital.

M. Gendrin . . .	44	M. Sée . .	19
M. Nonat . . .	5	M. Laugier	11
M. Valleix . . .	17	M. Michon	5
M. Morrotte . .	23		

These tables show that the greatest number of cases of cholera arose within those wards into which the greatest number of cholera-patients were brought from without; but that this increase is not observed in M. Nonat's wards where fumigations were practised. Whether it may be considered as a coincidence or as a mere sequence, it is a fact (says M. Nonat) that the almost complete immunity from cholera contagion in my wards occurred from the moment of the permanent instituting of chlorine fumigations in them.—*Ibid.*

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Isolation of Cholera Patients.—At the Parisian Hospital Medical Society, the question as to the isolation of cholera patients has been discussed.

At St. Antoine, where isolation was strictly practised during the first three weeks of the present epidemic, not a single case originated within the hospital. The cases which occurred afterwards were chiefly of attendants and in the neighbourhood of the cholera wards. Perfect isolation, said M. Bucquoy, appears to have been practised at the military hospital Gross-Caillou, and the dejections and vomited matters were disinfected. Not a single case originated within the hospital, although a great many

cases were admitted.—M. Bernutz said that at La Pitié, thirty cases out of 157 originated in the hospital; six of these came from the surgical ward situated near the place where the beds, etc., of the cholera patients were cleaned; one of the persons engaged in cleaning them was attacked with cholera.—M. Bucquoy mentioned striking cases to instance the transmissibility of cholera. A wet nurse returning from Paris fell ill and died of cholera at Péronne on October 28th; her husband was also attacked, and died. Five other neighbours were also attacked. Another nurse, also returning from Paris, died of cholera; her child was then given to another nurse, who also died of the disease, as well as the infant. A third nurse was also attacked. They all three belonged to the same party; and had been living several days in Paris in the Quarter of Municipal Direction of Wet Nurses, where the epidemic was then raging. The result of this was, that wet nurses from Péronne were no longer allowed to go to Paris for the purpose of bringing back with them children for suckling. These facts were all found scrupulously correct, added M. Bucquoy. No case of cholera had been previously observed in the district, and the epidemic appears to have been stifled.—M. Hérard observed that the number of cases originating in hospitals was less than in former epidemics; and he attributed this to the present isolation of cholera-patients at St. Louis, where isolation was carefully practised, very few cases originated in the hospital.—*Brit. Med Journ.*, Dec. 9, 1865.

CLINICS.

CLINICAL LECTURE.

Clinical Lecture on the Study of Children's Diseases. Given in the Hospital for Sick Children. By CHARLES WEST, M.D., Physician to the Hospital.

GENTLEMEN: A very wise and good man, to whom I owe much of whatever I have learned of my profession—Dr. Latham—makes somewhere the remark that he was struck at the outset of his career with how, in a large hospital, knowledge was continually running to waste for the want of some one to gather it. He says, too, that this which struck him then, struck him even more forcibly in after years; the old experience, in short, "*Ars longa, vita brevis*," which is realized more and more as the shadows lengthen and the day goes down.

I feel it specially with reference to this hospital, because here, or in inquiries such as its wards suggest, my time, and thoughts, and energies have been engaged for the past five-and-twenty years, and I rejoice to see you here to-day, gentlemen, because in some of you I trust that I may find fellow-labourers—men already schooled by previous study, and who will be able as well as ready to gather for the common benefit, some of that knowledge which will otherwise be but too likely lost.

But I am glad, also, to see others here, who as yet are but imperfectly trained, because, while they have much to learn, they have come here, to one of the best places in which to learn it, since disease may here be studied in its simplest forms.

It has been recommended by some, most fitted to give advice, that the student of medicine should begin with the diseases of the eye, since through its transparent coats, as through a glass, the various processes of disease and recovery may be seen transacted, and "many of the little wonderful details in the nature of morbid processes may be learned, which, but for the observation of them in the eye, would not have known them at all." The ophthalmic wards of a hospital must, indeed, be revisited at a later period for the sake of the special knowledge to be obtained there; but they may well be visited at first for the elementary teaching which they afford.

Somewhat in the same way you may come at two periods of your career to the study of children's diseases. *First*, to observe disease in its simplest conditions: then *later*, to investigate the peculiarities of symptoms which result from the tender age of your patients, and the modifications of treatment, which on that account may be required.

First, I said, to study disease in its simplest form. The chemist who analyzes a substance submits it to various processes in order to remove from it all extraneous matters, and then applies to it tests to determine its real nature. This which the chemist does, however, is very difficult, indeed, in the investigation of disease. Pure pathology is the doctrine of disease, unmodified by the intervention of disturbing causes

from without or from within. To this in adult age we scarcely ever attain. The body, even in apparent health, yet tends imperceptibly to decay. We study disease in its influence on parts already damaged. The follies of youth, the vices of maturer age, the anxieties of business, the failure of hope, all leave their impress on the body, diminish its reparative powers, and render the different organs inapt to do their duty, so that almost all disease appears in a complicated, scarcely ever in a simple form.

Care, too, which sits at the bed's head of the grown person, does much to retard recovery and to complicate disease. "Is your mind at ease?" said his physician to poor Goldsmith on his death-bed, observing how his pulse outbeat the frequency for which his bodily ailment would have accounted. In childhood there is little or none of this; no regret for the past; no dread of the future. The present is the world in which little children live; pain past is almost forgotten; and this mental tranquillity contributes in no small degree to their recovery.

But I will no longer occupy you with insisting on things with which a little time spent here will make you quite familiar. I will rather make a hasty survey of some of the cases which are now in the hospital, or which have been here so recently that many of you have had the opportunity of seeing them. I select them very much for the illustration they furnish of the unsolved problems which I want some of you to try to answer.

A little boy, aged 19 months, was admitted into the hospital, on the fourth day, of an attack of pneumonia of both lungs. His respirations were 60; his pulse beat 148 in the minute. There was dulness at the base of both lungs, especially of the right; fine crepitation was heard below both scapulæ. I scarcely need add that the child seemed very ill. He was drowsy, but at the same time restless. He was very hot, and his skin dry. He had some cough, but not very much. A mustard poultice was applied to the back and the chest. A little ammonia was given with small doses of ipecacuanha; beef-tea and wine for food.

In the night the distress and restlessness were extreme until relieved by spontaneous vomiting; but on the afternoon of the fifth day the child was already better; the respiration had fallen in frequency to 44; and there was slightly improved resonance of the chest. Improvement continued. On the ninth day the respiration had fallen to 21, and the pulse to 124; percussion yielded an almost natural sound; and some largish crepitation was the only evidence remaining of the dangerous illness.

Now here the recovery took place speedily and decisively, and in a way in which one could not refer it to the remedies employed. Nor is this a solitary case; it is one of many to which attention has of late years been especially called, which raise the question as to when and how far an expectant treatment may be adopted in inflammation of the lungs. It suggests to you the importance of determining the period of pneumonia, at which spontaneous improvement is most likely to occur, the circumstances which in any given case justify you in expecting it, and those which, on the other hand, render its occurrence doubtful. Further, there remains the important question whether, though recovery would take place independent of treatment, it yet occurs sooner, or is more complete if treatment is adopted than if the case is let alone.

A girl, 7¼ years old, was admitted with the following history. Nine months before she suffered from severe pain in her limbs, which yet did not constantly keep her in bed; but she was up every morning, and then as afternoon came on, grew worse, and went to bed. During much of this time her heart beat very much, and at the end of a month, when the pains in her limbs had already ceased, she suffered so much from her heart that she was confined to bed for six weeks. When better she attended for some months as an out-patient, but six months after her illness began, her legs swelled, her breath became short, and at length she came for admission here.

The heart's impulse was visible in the fourth, fifth, and sixth interspaces; the apex beat in the sixth interspace, one and a half inch outside the nipple line. The upper dulness limit reached to the third rib, and the inner to a finger's breadth to right of the sternum. The oblique diameter of the heart was five and three-quarter inches, the transverse five, the longitudinal three and three-quarter inches; while, as you can now see for yourselves, there is a very manifest bulging of the whole heart's region. There was a prolonged wheezing

systolic murmur heard at the apex, which diminished rapidly in loudness towards the base; the second sound was inaudible at the apex, but clearly heard at the base of the heart.

I am not going to trace this child's history in detail. She got relief from treatment, went out much better in three months, but soon came back in a state of great distress, for now pericarditis had come on. For some time she seemed likely to die, but once more got better, and you see her now, eighteen months after the rheumatism in which her sufferings began.

Now, here you have a case of heart disease, with enormous dilatation of the organ, succeeding to a comparatively slight attack of rheumatism. Each year adds to the child's sufferings, from which she will find rest only in an early grave.

Why is this so? Why does even a very small amount of valvular disease tend in some instances to produce a large amount of dilatation?

It is not an invariable occurrence. So little, indeed, is it invariable that Dr. Latham notices the probable existence of some compensating power in the young heart, by which atonement is made for the effects of valvular disease: "a certain *protective* power possibly inherent in the growing heart, whereby it can accommodate its form and manner of increase to material accidents, and so suppress or counteract their evil tendencies."

But why is this sometimes? Why not always? Why not often? Is this happy issue rarer now than formerly, and if so, can it be that the change in practice which recent years have brought with them—the abolition of depletion, the disuse of mercury, have rendered the cure of rheumatic affections of the heart less complete than formerly? Or is it only, and this I apprehend to be the case, that our diagnostic skill and pathological knowledge have outstripped by far our therapeutical resources, that we discover the ills which we are impotent to cure?

A strong-looking, well-made girl, 10 years and nine months old, began to suffer causelessly from chorea three weeks before admission into the hospital. There was no history of rheumatism in her family, nor had she herself presented any rheumatic symptoms, though there was a weak systolic bruit audible at the apex of her heart, which persisted, but did not increase either in extent or in loudness during the whole of her illness. The choreic movements were at first limited to the left arm, but they increased rapidly in spite of treatment, so that a month after admission the child was compelled to be placed in a bed padded all round, on account of the violence of her movements, while deglutition was very imperfect, and speech almost abolished.

She remained in the hospital for three months; at the end of which time she was almost well, and was sent into the country. She was submitted to very varied treatment, but without benefit, and her eventual improvement was spontaneous. For a time she improved in the country, but at the end of two months returned with a relapse of all her former symptoms, though their severity was far less than on the former occasion. In this instance medicine seemed just as unavailing as before. The child began spontaneously to improve at the end of one month, was well at the end of two months, and has, I believe, since continued so, though the time is yet too short to feel sure of the permanence of her recovery.

Here, again, are several questions which await an answer. Why is the first attack of chorea almost always the most severe? Why is there no definite relation between the severity of chorea and the severity of the heart affection, and why is the heart sometimes quite unaffected, even though the chorea is very severe? Lastly, why is the heart affected at all, since the assumption of its rheumatic character, though true to a certain extent, is yet by no means always tenable?

Further, what clear indications can be laid down for the treatment of chorea besides the two furnished by the existence of constipation on the one hand, and anæmia or debility on the other, and the combined use of purgatives and tonics which they suggest?

Zinc and antimony, strychnine and belladonna, shampooing and sulphur baths have all been used in the treatment of chorea. When is the one right, when the other, or in what combinations are they best employed? In what combinations? for I would not have you fall into the error into which the prevalent folly of homœopathy may imperceptibly lead you, of supposing that in order to act at all each remedy must be employed alone. He is the best physician, who knows best not only what remedies to

use but in what combinations; as the skilful general trusts not to his infantry alone, nor alone to his cavalry, but gains his victory most surely and most quickly by using different troops in combination; or,

"As many arrows loosed several ways
Fly to one mark."

Two more cases, and I have done for today. One is in the hospital now, the other recently left.

A boy, 8¼ years old, was always a backward child, and while teething had three attacks of convulsions. Three months since he seemed causelessly languid for a fortnight: and then he was suddenly seized with vomiting. For six weeks together the vomiting returned daily or every other day. It was associated with an increased languor, and, by degrees, with drowsiness, and with pain in the occiput, which, though constant, became sometimes so severe as to make him scream aloud. A month after the commencement of these symptoms he was first observed to squint, and at the end of two months he had a fit which lasted for half an hour In the ensuing month these fits returned six times. The vomiting ceased after the first fit, but the other symptoms continued, and became associated with pain on any movement of the limbs, and three weeks before his admission into the hospital it was first observed that his pupils were dilated, and that he had lost the power of sight.

He was a pale, thin child, with a peculiarly wretched expression of countenance; absolutely blind—his right eye looked straight forwards, his left inwards, and both were in a state of constant motion. He had complete power over his limbs. His headache was not constant; his appetite was good, and he did not vomit during the fortnight that he remained in the hospital. Nothing, however, seemed for a moment to amuse or please him, and he was allowed to go home all the more readily that his case was not one which held out much prospect of benefit from treatment.

What was this case? There was no family history of tubercle, nor did the boy present any appearance of it. Still the symptoms are not those of any acute inflammatory disease, and I should be disposed to imagine that they were due to the gradual development of some tumour (and these tumours are almost always tuberculous), which, arising at the base of the brain, had, by degrees, increased until by pressure on the optic nerve it had abolished the power of vision. And here it may remain stationary, though more probably it will continue to grow until it causes death, either suddenly by some outpouring of blood from the vessels at the base of the brain, or more slowly, by the production of inflammation, or by effusion, into the ventricles consequent on pressure on the veins of Galen.

Here is, lastly, another case, somewhat obscure, indeed, but yet less so, I take it, than the preceding one:—

A girl, 8½ years old, whose father and two of her brothers had died with symptoms of brain disease, had suffered for a fortnight from troublesome cough, when she seemed unusually heavy, was attacked by violent sickness with headache, and sank speedily into a state of stupor, which continued with intervals, during which her mind wandered, and she rambled in her talk for thirty-six hours. At the end of this time consciousness returned, and the child sat up in bed, and showed some gleams of cheerfulness, but the pulse, which had been irregular during the state of stupor, still continued so, and the head was held somewhat retracted. Pain in the head and some retraction of it continued, though the child was well enough to be up, and moved about the ward.

She left by her mother's wish in a fortnight, and at the end of another fortnight she returned, much emaciated, complaining of pain which was now referred more to the ears than to the head, of pain also in the neck and in the right shoulder, towards which her head was inclined.

On this occasion she remained in the hospital four weeks. During this time she grew thinner and thinner, her skin became harsh, her abdomen retracted and tender to the touch, and her head was still drawn back as before. Auscultation now found the breathing weak everywhere, but especially so at the apex of the left lung, and percussion there was obviously dull. There was no vomiting, however. The bowels, once constipated, had now become regular, the complaints of headache were less constant, and the pulse had lost its irregularity. General tuberculosis was advancing; the mischief in the brain, I suppose, was stationary.

What is the import of this sudden development of the signs of cerebral disease, and what of their spontaneous passing into

abeyance? If we could learn to answer these inquiries aright we might possibly do something to arrest disease, even though we were unable to effect its cure. Here, then, is another problem which I leave for your consideration.

But, say you, you came here to be told what I do know, and I have talked to you almost entirely of what I do not know, and that is not the object of a lecture, the purpose of which should be to impart positive knowledge.

Gentlemen, it is not quite so. The acquisition of knowledge implies an active, not a passive state, and to this it was my object to excite you. It is when you seek as for riches, and search as for hid treasure, that you gain it; so, at least, said the man wiser than other men, and who himself wrote of all things, from "the cedar of Lebanon to the hyssop that groweth on the wall."

You have come to the study of medicine, furnished far differently from those who, like myself, entered on it more than thirty years ago. It is but right that you should turn these advantages to good use. We are, indeed, as has been well said, like people standing together on a hill, which I have climbed before you, and I, to whom the landscape is in some measure familiar, may say to you, look here and look there, and you will see this and that. But further. I say to you, the objects there are indistinct to me; but you have perspective glasses of higher power than mine; turn them in this direction or in that, and you may with patience discern clearly what I can see but partially, or, with my imperfect instrument, perhaps cannot see at all.

If you visit the wards of this hospital, I may, too, do some of you the service, that I may point out to you what is worth the seeing, and may help to guard you from the dangers of the young student—that of playing with the instrument itself, vain, perhaps, of his dexterity in its use, or of turning it thoughtlessly on trifling things not worth the investigation.

You must not forget that it is your duty, as it is mine, to map out the country for the use of yourselves and of future travellers, to seize its great features, which may serve as landmarks, and not to waste your time on some quaint tree or curious rock which lies quite out of the path along which you have to journey.

"Nisi utile est quod agimus vana est gloria nostra" should be your motto, though in a different and a lower sense, indeed, from that in which it was employed by the inspired penman some eighteen hundred years ago.—*Med. Times and Gaz.*, Oct. 28, 1865.

HOSPITAL NOTES AND GLEANINGS.

Case of Ligature of the External Iliac Artery.—On November 17 Mr. Adams tied the external iliac for the cure of an aneurism of the common femoral artery. The case was that of a woman, aged 53, and was peculiar from its being supposed to have originated from a kick in the groin received three years ago. A swelling resulted from the violence inflicted, and remained stationary until five months ago, when it began to enlarge until it increased to the size of two fists, and extended into the pelvis at least three inches. The limb was much swollen and very tense in some parts, owing to the pressure upon the vein. The minute capillaries of the skin were much distended.

An incision of at least five inches was made in the usual situation, and the layers of abdominal muscles and the fascia transversalis were carefully divided, and the artery was readily secured.

The case has progressed satisfactorily to the present time, the tumour has much diminished, and the leg has returned to its natural shape and size.

The ligature came away on the twenty-ninth day.—*Med. Times and Gaz.*, Dec. 22, 1865.

MEDICAL NEWS.

DOMESTIC INTELLIGENCE.

Council of Hygiene, Citizens' Association of New York.—This council, the officers of which are: *President*, Joseph M. Smith, M. D., *Vice-President*, Willard Parker, M. D., *Secretary*, Stephen Smith, M. D., with twelve of the most eminent physicians of the city as members, have proposed the following organization for effecting sanitary improvements of towns, and for the prevention and mitigation of cholera.

"*Whereas*, The commercial and social relations of the cities, villages, and communities of the State have become so intimate

by the great facilities for travel, that contagious, infectious, and epidemic diseases are rapidly and widely disseminated from populous towns, where they are fostered and frequently generated by the neglect of sanitary works, to other towns along the principal public thoroughfares, and to the most remote rural districts; and

"*Whereas*, Cholera, the most fatal of modern epidemics, and soon apparently to visit this country, is governed by the same law of progression as other pestilential diseases, spreading from town to town along the great routes of travel, and selecting the filthy and unclean districts of cities for its ravages; and

"*Whereas*, Experience teaches that the communicable diseases of towns and epidemic cholera may be controlled, and frequently suppressed, by the timely and rigid enforcement of proper sanitary regulations; and that when the latter is prevailing its severity may be greatly mitigated, and its fatal issues prevented by the prompt and efficient treatment of its premonitory symptoms; therefore

"*Resolved*, That the people of this State have a common interest in the public health of its cities and villages; and, for their own safety, as well as for the public good, should, with united effort, sustain every measure designed to effect sanitary improvements of towns, and to prevent the spread of pestilential diseases therefrom.

"*Resolved*, That in view of the approach of Asiatic cholera, we urge the medical profession of the State of New York to form voluntary organizations in every city, town, village, and community exposed to an attack of the epidemic, for the purpose of effecting, *first*, needed local sanitary improvements; and, *second*, to organize a corps of house-to-house visitors, who, in the event of the prevalence of cholera, shall visit the poor at their homes daily, and search out and promptly treat all cases of premonitory diarrhœa.

"*Resolved*, That all such organizations be invited to correspond directly with this council, and with each other, in order to concert of action in the adoption and prosecution of measures of prevention and mitigation of cholera, and for the purpose of a systematic study of its various phenomena over a large field."

The council, in the prosecution of their objects, "has organized a corps of Medical Sanitary Inspectors, thirty-one in number, who have made a thorough inspection of the city, the results of which have been published in the form of a report to the Association.

"With this corps of inspectors, properly augmented, the Council propose, in the event of the appearance of cholera, to undertake a systematic house-to-house visitation, with a view to the early treatment of the premonitory diarrhœa at the homes of those affected. This plan is extensively adopted in England, and there is evidence that in former visitations of cholera many towns were saved from a single fatal case, though thousands of cases of diarrhœa were treated.

"It is the hope of the Council that similar voluntary associations will be made in every city, town, village, and community, in order that the Medical Profession of the State may present a united front against the invasion of the epidemic; and, in the event of its breaking out in any locality, may have in readiness for immediate and effective action, an organization that will control its progress and mitigate its severity."

The prompt and judicious action of the profession in New York city in this matter cannot be too highly commended, and we most earnestly urge upon the profession here and elsewhere throughout our country the adoption of a similar course.

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American Sanitary Museum of Dr. Thomas W. Evans.— [Dr. Thomas W. Evans, now of Paris, desiring to benefit mankind generally, and to confer honour on his native country by making known abroad a great number of inventions, made by his countrymen for relieving sick and wounded soldiers, has issued the following circular, to which we invite attention:—]

"Penetrated with the idea that the Sanitary Commission of the United States, by mitigating the horrors of war, had resolved one of the most urgent questions of modern time, I was one of the first persons in Europe who endeavoured to acquaint the public with the organization and the results of that admirable institution. I first published a book ('La commission sanitaire son origine, son organization et ses résultats') in which I conscientiously exposed the efforts and the final success of the Sanitary Commission during the gigantic struggle that the United States sustained with un-

abated courage. Afterwards appeared my French translation of military, medical and surgical essays. By acting so I felt I was serving both the cause of humanity and that of my native country.

"After having shown the wonderful results of the Sanitary Commission, it would be just and proper now to acquaint the public with the great number of ingenious inventions, made by my countrymen in view of relieving the sick and the wounded soldiers

"In order to realize this project, I intend to assemble in a collection the products of those inventions which have enabled the Sanitary Commission to fulfil its mission.

"The universal Exhibition that is to be opened in Paris in 1867, is certainly the best opportunity for the inauguration of this Sanitary Museum. During that exhibition no civilized nation will be unrepresented in the French metropolis. The articles exhibited in such a Museum will therefore call the attention of all those who wish the welfare of mankind, and acquaint all nations with the name of their inventors.

"In addressing myself to my countrymen I am firmly convinced that they will assist me in my patriotic and humanitary enterprise. Although I am willing to purchase all such articles as may be useful, I shall gratefully accept any object that the inventors or manufacturers would wish to contribute.

"I therefore most respectfully request all such persons who are disposed to co-operate in the creation of the American Sanitary Museum, to address their communications to Dr. Thomas W. Evans, 15 rue de la Paix. Paris (France), or to M. Abner L. Ely, 22 Pine Street, New York.

THOMAS W. EVANS. M. D.,
15 *rue de la Paix.*

Paris, Dec. 1, 1865."

FOREIGN INTELLIGENCE.

Death from Chloroform.—At a recent meeting of the Berlin Medical Society, Dr. Hüter related a case of death from chloroform which occurred in the Surgical Polyklinik. A boy 4½ years of age, who some time since had an attack of scarlatina followed by œdema of the extremities and albuminuria, was brought on account of retention of urine, none having been passed, according to his mother's account, for two days. Slight œdema still existed, and the child looked pale and ill. On examination there was found to be distension of the bladder, but the boy was so restless while it was made that it was deemed prudent to administer chloroform before passing the catheter. This was given by an assistant accustomed to its exhibition, a napkin being moistened with a small quantity—this being, in fact, less than children of this age usually require, and not to be compared to that employed in operations. The abdomen was examined again, and a catheter was passed into the bladder, from two to three minutes at most having elapsed since it was determined to employ chloroform. At this moment, however, the lips were observed to become blue and the jugulars distended, while the pulse and respiratory movements ceased. A deep inspiration was caused by passing the finger down to the epiglottis, but this could not be renewed; a second one, however, occurring upon opening a vein of the neck and discharging an ounce or two of blood to relieve the turgor. Tracheotomy was now resorted to (a third inspiration occurring during its performance) and artificial respiration performed, the diaphragm being at the same time stimulated by the induction apparatus, and the face kept sprinkled with cold water. Electricity was also applied in the region of the heart, and this was followed by acupuncture of the organ by means of two long needles. The heart's action, which had ceased to be audible, was seen by the regular and isochronous movements of the needles to become temporarily revived. These, however, soon ceased. All these means were most energetically applied by able assistants, and Dr. Hüter does not see that in a similar case that he could do otherwise, excepting, perhaps, that he would resort to acupuncture of the heart at an earlier period. No account of the autopsy is furnished. He does not think that so exceptional a case of death from chloroform should influence our general employment of this agent—this, indeed, being the first instance on record of a child under five years of age dying from the effects of chloroform. Deaths under chloroform may be ranged in three categories—those in which this agent really exerts no essential effect, the patient dying not through, but during, the narcosis, in consequence of some other circumstance accompanying or preceding the operation; those cases in which the

narcosis only operates mediately—*e. g.*, through the flow of blood into the anæsthetized glottis during operations on the throat; and those cases in which the narcosis is the direct cause of death. It was so in the present case, although the patient had inhaled so little of the chloroform the entire purity of which has been ascertained.—*Med. Times & Gaz.*, Jan. 6, 1866.

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Epidemic of Trichinosis.—An eye-witness gives in a recent number of the *Deutsche Klinik*, an interesting account of a severe epidemic of *trichinosis* which occurred at Hedersleben, in Prussian Saxony—a place containing about 2 000 inhabitants. A butcher having slaughtered two pigs, most of the consumers, among whom were many factory hands, ate the chopped flesh in a raw condition; and soon afterwards many persons at the factory were seized with a similar illness. One of the doctors of the town immediately suspected trichinæ, but others called in consultation declared the affection to be cholerine. However, as out of 37 cases 20 soon died one after the other, the autopsies amply proved that the disease really arose from trichinæ; and three weeks after the first case the whole number had amounted to 300, with 40 deaths. (According to another account, there were 100 deaths.) This does not represent the whole numbers, for several persons, alarmed by the cholera panic, left the town, and of these several have died at the places they repaired to. At the autopsies, even three weeks after the outbreak, numerous "parent trichinæ" were found in the intestinal mucous membrane, the great bulk of the animals being in the intramuscular structure. The number of children affected, going down even to the third year, was remarkably great, yet they all recovered. As on other occasions, some of the patients, though exhibiting all the characteristic symptoms, denied having eaten pig's flesh, while some admitted only to have partaken of the fat. The immediate cause of death seemed to be paralysis of the inspiratory muscles; the most alarming symptoms, besides the loss of motion, were the profuse sweating and complete sleeplessness. There was delirium only in one case, and the convalescence resembles that of typhus. It seems that in examinations which have been recently made of beetroot, which forms the principal food of pigs, numerous animalcules have been found, but these are said to present quite different characters to those of the trichinæ.—*Med. Times & Gaz.*, Jan. 6, 1866.

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Etherization.—M Petrequin, of Lyons, brought the subject of *etherization* the other day before the Academy of Sciences. It seems that he and almost all the Lyonese surgeons have adopted ether in preference to chloroform during the last fifteen years, and have met with no fatal cases or serious accidents, while complete anæsthesia has been promptly and effectually secured. Its free adoption at first was impeded by three circumstances, which no longer prevail. 1. The defective and complicated character of the apparatus employed. These have been now superseded by a simple contrivance, termed a *sac a ethériser*, which is admirably efficient. 2. The ether employed at first was of insufficient strength and impure. A strong, pure, concentrated, rectified ether at 62° or 63° is now sold for the purpose at the Lyons' *pharmacies*. 3. The inexpertness of the early manipulators is now exchanged for a dexterity which induces quiet and speedy etherization; while a careful observation of the pulse and respiration secures the patient from all accidents, which are easily averted, when threatening, by temporary suspension of the inhalation. Such accidents, under ether, are always progressive, and not sudden, as under chloroform. They may be anticipated or arrested, and never present themselves with the formidable rapidity characterizing some of those induced by chloroform. M. Velpeau, while believing that the statement of the entire innocuity and prompt utility of ether made by so important a body as the Lyons practitioners is highly deserving of the attention of the Academy, does not think the argument for its preference over chloroform at all conclusive. Many of the dangers attaching to this latter agent may also be due to its impurity or unskilful application; but, speaking from his own experience, he has employed chloroform in many thousand cases during the last fifteen years, without ever meeting with a fatal case. This, too, is the case with many of the surgeons in the best practice in Paris, and with the entire school of Strasburgh. In fact, either agent may have its useful application under different circumstances.—*Med. Times and Gaz*, Dec. 23, 1865.

Increased Use of Stimulants in the London Hospitals.— Some remarkable statistics regarding the employment of stimulants and the mortality in the London Hospital during some past years, appear in the last volume of the *Reports* of that hospital. In 1862, the number of in-patients was 4,519, and the general mortality 7.6 per cent. The quantity of stimulants consumed was 1,281 gallons of wine, 162 gallons of brandy, 38 gallons of gin, and 1,100 ounces of cinchonine.

In 1864, the number of patients was 4,619, and the general mortality 10.5 per cent.; the stimulants consumed by these being 1,558 gallons of wine; 359 gallons of brandy; and 77 gallons of gin. But as a set-off, if it may so be called, 760 more leeches were employed during this year than the average for the five preceding years; viz, 3,840. However, here we have a great increase in the amount of stimulants consumed, and also a great increase in the mortality of 1864 as compared with that of 1862. We state the facts, let it be understood, without in any way pretending to connect them as cause and effect.

Other statistics Dr. Fraser gives us under this head. "From 1854 to 1858, the annual average quantity of wine employed by each physician was 12,803 ounces;" each physician having an annual average of 391 patients under treatment. The annual average mortality was 11.87 per cent. But from 1860 to 1864, the annual average quantity of wine employed by each physician was nearly quadrupled, being 48.136 ounces; his annual average number of patients was 413; and the annual average mortality was 12 65 per cent.

From 1854 to 1858, each surgeon employed annually 38,016 ounces of wine; his annual number of patients was 1,036, and the average annual mortality 4.48 per cent.

From 1860 to 1864 (five years), each surgeon employed an annual average of 142,951 ounces of wine (nearly four times more than in the previous years); the annual number of patients under him was 1.065, and the annual average mortality 6.65 per cent.

Hence we have, in the practice of both physicians and surgeons, a distinct increase of mortality coincident with great increase in consumption of stimulants.

Dr. Fraser also tells us (referring to a former paper of his) that, in 1851, there were 4,051 in-patients in the London Hospital; that in 1857, there were 3,935 in-patients; and that the mortality was greater in 1857 as 8 to 6.5 per cent., although £962 more were spent in 1857 than in 1851 for articles of luxury.

It is curious to note, that the only comment which Dr. Fraser makes on the above remarkable statistics is this:—

"It is evident, that a steady rise in the employment of stimulants..... is still going on; and whatever be the cause, we may rest assured that the practice is imperative and needful; for it would be a monstrous assumption that a whole staff could be blindly following an objectless routine."

Not a single word of comment does Dr. Fraser bestow on the constant fact of the coincident increase of the mortality!

The summary of these statistics stands thus:—

From 1854 to 1858, each physician employed 12.800 ounces of wine annually; the deaths being 11.88 per cent. From 1860 to 1865, he employed 48,136 ounces; the deaths being 12 65 per cent.

During 1854 to 1858, each surgeon employed annually 38.016 ounces of wine; the deaths being 4.48 per cent. During 1860 to 1864, he employed annually 142,951 ounces; the deaths being 6.65 per cent.

In 1862, the general mortality of the hospital was 7.4 per cent.; the consumption of stimulants being 1,281 gallons of wine, 162 of brandy, and 38 of gin.

In 1864, the mortality was 10 5 per cent.; the quantity of stimulants consumed being 6,558 gallons of wine, 359 of brandy, and 12 of gin.

We again repeat, well knowing the sad fallacies which are so often edited through an erroneous interpretation of statistics, that we do not pretend to connect the increase of deaths with the increase of stimulants consumed. But, when we reflect upon our modern advancement in medicine and surgery (especially as miscalled conservative), when we think of our great modern hygienic efforts, we may fairly ask for some explanation of the fact of a general advance in the mortality of a London Hospital.—*Brit. Med. Journ.*, Dec. 9, 1865.

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Baron Liebig on Coffee.— Baron Liebig, in an a recent No. of the *Popular Science*

Review, gives the following directions for making this beverage:—

First of all, coffee should always be sorted. It frequently contains foreign substances, and usually a number of black mouldy berries; these spoil the flavour of the coffee. Berries of dark or green hue are generally dyed. They should be washed in a little warm water, and afterwards dried with a warm linen cloth. In order to retain the volatile caffeine, the berries should only be roasted till they are of a pale-brown colour. In those which are too dark there is no caffeine; if they are black, the essential parts of the berries are entirely destroyed and the beverage prepared from them does not deserve the name of coffee. When roasted, they constantly deteriorate by the access of air. If, when the roasting is completed, half an ounce of white or brown sugar be strewn over each pound of coffee, it gives the berries a fine glaze, which protects them from the atmospheric destruction. The usual methods of preparing coffee are classified by Liebig as—1st, by *filtration*; 2d, by *infusion*; 3d, by *boiling*. Filtration partially injures the aromatic particles, and makes an incomplete extraction. Infusion gives a very aromatic coffee, but one containing little extract. Boiling gives a coffee rich in extract, but poor in aroma. Here, then, is Liebig's compound method:

"The usual quantities both of coffee and water are to be retained; a tin measure containing half an ounce of green berries, when filled with roasted ones, is generally sufficient for two small cups of coffee of moderate strength, or one, so called, large breakfast cup (one pound of green berries, equal to sixteen ounces, yielding after roasting twenty four tin measures [of half an ounce] for forty-eight small cups of coffee).

"With three-fourths of the coffee to be employed, after being ground, the water is made to boil for ten or fifteen minutes. The one quarter of the coffee which has been kept back is then flung in, and the vessel immediately withdrawn from the fire, covered over, and allowed to stand for five or six minutes. In order that the powder on the surface may fall to the bottom, it is stirred round; the deposit takes place, and the coffee poured off is ready for use. In order to separate the dregs more completely, the coffee may be passed through a clean cloth; but generally this is not necessary, and often prejudicial to the pure flavour of the beverage.

"The first boiling gives the strength, the second addition the flavour. The water does not dissolve of the aromatic substances more than the fourth part contained in the roasted coffee."

This coffee, says Liebig, must be judged not only by its agreeable qualities as a beverage, but by its excellent effects on the organism. There are many other interesting details in the paper, for which we must refer our readers to the source above-named.—*Lancet*, Jan. 6, 1866.

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Oxidation of Fatty Vegetable Oils.—M. Clöez has exposed oils to the air in colourless glass vessels, and also in vessels of red, yellow, green, and blue glass, and also left some oil exposed to air in total darkness. After ten days' exposure the increase of weight was greatest in the colourless glass vessel; it was rather less in the blue glass; was very small in the red, yellow, and green; and no increase of weight at all was observed in the oil exposed in the dark. Like results were found after twenty days; but after thirty days' exposure the results were somewhat different. The increase of weight was greater in the coloured glasses than in the uncoloured, green showing the largest increase after 150 days' exposure. Poppy oil, after a time, oxidized faster in the dark than when exposed to coloured or white light. Oil heated in atmospheric air oxidized much more rapidly than cold oil. The oxidation may be accelerated without heat by adding some oil already oxidized.—*Ibid.*, from *Chem. News.*

—

M. Jobert de Lamballe.—We learn with regret from our recent journals that this eminent surgeon is suffering from mental derangement which has necessitated his removal to a lunatic asylum.

—

Obituary Record.—Several medical men have succumbed at Madrid from cholera. Professor Quintanilla, and Drs. Avilès and Montana, two of the leading physicians of the city, have fallen victims to it; so also have MM. del Pozo and Andrès, attached to the Ambulance; and Gabridra, the Dean of the Pharmaceutical Faculty pon y Camps, and the *Pharmacien* Iniguez, have been carried off At Cadiz, Dr. Gabarron, Professor of Surgery, died of cholera.

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CHOLERA.

Notes on the Pathology and Treatment of Cholera. By GEORGE JOHNSON, M. D., F. R. C. P., Professor of Medicine in King's College, &c. (Continued from p. 20.)

In previous communications, I have adduced some facts and arguments adverse to the commonly received theory that the worst symptoms of cholera are mainly due to the drain of water from the blood by vomiting and purging. If this theory be erroneous, it is of incalculable importance that it should be discarded; for it is unquestionable that it has had immense influence on the treatment of cholera, as well as on the estimate which men have formed of the effect of various modes of treatment. Let a practitioner be thoroughly persuaded that the essential cause of choleraic collapse is a drain of liquid from the blood, and it will be difficult to convince him that opium and astringents can do harm, or that an emetic or a purgative can do anything but harm in the treatment of that disease.

A recent writer in the *Lancet* (Oct. 21st, p. 461) says: "Were we a cholera-patient, we should pray to be delivered from men who have only one idea." Yet it is manifest that this writer is of the class from which he would pray to be delivered. His one idea is, that the secretions are suppressed "for want of serum; and that by supplying the materials of this, and by the use of means that shall act astringently, we are taking the best means to restore secretions." What does it avail to refer one, whose mind is thus prepossessed by a theory, to such facts as are contained in the very interesting paper by Mr. Watkins, published in a recent number of the *British Medical Journal* (Oct. 28th, p. 445)? Mr. Watkins there states that, in 1854, the deaths under various modes of treatment, but mostly with opium, having been more numerous than the recoveries, at a period, too, when

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"the epidemic was increasing both in the number of cases and in severity," he treated twenty-one cases by repeated doses of castor oil; and, of the cases thus treated, nineteen recovered. About the same period, his colleague, Dr. Lett,[1] treated seven cases by full doses of opium, and "every case had died." What will be said of facts like these by a man whose one idea of the treatment of cholera is, that loss of fluid is to be counteracted by astringents? He will probably argue, that those who recovered while taking purgatives did so in spite of an erroneous and a mischievous treatment; while those who died under the opiate treatment succumbed to the disease in spite of a treatment which was theoretically correct, and which ought, therefore, to have saved them.

I am convinced, from a careful study of the history and literature of cholera, that there will be no general agreement as to the treatment of the disease until we have freed ourselves from erroneous theories as to its pathology and the relation of its symptoms to each other. With this conviction, I purpose now to set forth, as clearly yet as briefly as I am able, certain facts and conclusions regarding the pathology of cholera which appear to me to be well established.

That the symptoms of cholera result from a morbid poison, which may enter the blood either through the lungs or through the gastro-intestinal canal, is a point so generally admitted, that I will not now stop to discuss the question, or to adduce any of the numerous facts upon which this view is based.

The most constant and characteristic effect of this poison is to excite a copious secretion from the mucous membrane of the stomach and bowels. This secretion is tinged with bile *before* collapse comes on, and again *after* collapse has passed off; while during the stage of collapse it has the characteristic rice-water appearance, and bile can be detected only by chemical tests. The vomiting and purging constitute the means by which the morbid secretions are eliminated from the alimentary canal.

It is certain that the cholera stools contain some poisonous materials by which the disease may be communicated. One fact confirmatory of this view is the frequency with which washerwomen and their families have suffered from coming into contact with the soiled linen of cholera patients. It is probable, therefore, that the poison is eliminated through the gastro-intestinal canal. It is also probable that the secretion from the mucous membrane of the digestive canal, together with the vomiting and purging, are as much parts of the natural process of cure as is the eruption on the skin in the case of smallpox. This, at any rate, is certain, that, as no patient ever yet recovered from smallpox without the appearance of the characteristic eruption, so no sufferer from cholera was ever known to get well without more or less of vomiting and diarrhœa.

As, in the worst and most malignant forms of smallpox, the patient may die of blood-poisoning before the rash appears, so, in the worst and most malignant cases of cholera, he may die of collapse without either vomiting or purging, or with little of either. There is no direct relation, as we have seen (see pp. 1, 2), between the degree of collapse and the amount of vomiting and purging—sometimes rather an inverse ratio between them.

There is yet one more point of analogy between smallpox and cholera. As the variolous eruption, which is unquestionably curative, may yet by its very abundance be fatal through its destructive influence on the skin, so the choleraic secretions may be so copious as to kill by exhaustion. Death by exhaustion is certainly not a common result of cholera; yet with the known possibility of such a result, a rational eliminative treatment, while it endeavours to free the stomach and bowels from the morbid secretions which have been spontaneously poured into them, makes no direct attempt to increase the amount of excretion from the blood.

It has been suggested by some writers, that the analogy of smallpox and its treatment affords an argument against the eliminative treatment of cholera. It is said, with truth, that when the treatment of smallpox was conducted on the theoretical principle of assisting the development of the pustules and so the elimination of the poison, by keeping the patient in a close and heated atmosphere, the mortality of the disease was much increased. It would have been strange indeed if the mortality had not been increased by such a mode of

[1] The case of Dr. Lett himself is one of peculiar and most painful interest.

treatment; but it is a result of shallow observation and reasoning, to infer that there is any analogy between that mode of treating smallpox and the use of emetics and purgatives in cholera. The unhappy sufferer from smallpox, who was covered with heaps of bed-clothes and confined in an artificially heated atmosphere, with closed doors and windows, was not only deprived of the refreshing influence of cool and pure air; but he was compelled to inhale again through his lungs the morbid poison which had escaped from his skin. This treatment was the exact opposite of eliminative. To eliminate is to put *è limine*, or out of door; but this irrational treatment rendered elimination impossible by closing the doors and windows through which the poison might have escaped.

So far from there being any analogy between this destructive mode of treating smallpox and the treatment of cholera by emetics and purgatives, the analogy would be much closer with an opposite mode of treatment—one by which a patient should be made to swallow his own evacuations, or one which approaches very near to this in its results; namely, that which has for its object to restrain the evacuations by opium and astringents, thus increasing the risk of the morbid secretions being reabsorbed into the blood.

There is no known cure for cholera—there probably never will be; but, as the cooling treatment of smallpox which, in spite of violent opposition, was first introduced by Sydenham, materially lessened the mortality from that terrible disease. so the general adoption of an eliminative treatment of cholera—by means of emetics, mild purgatives, and copious draughts of water—would, I am persuaded, do much to lessen the mortality from this great modern scourge.

The analogy of smallpox and the results of the two opposite modes of treating that disease, are certainly in favour of, and not opposed to, this view, as some writers have too hastily assumed.

In my next communication, I shall endeavour to explain the symptoms of that remarkable condition which we know by the name of choleraic collapse.

The symptoms and pathology of collapse.—The symptoms of choleraic collapse are so well known as to need no minute description. The most important and characteristic of them are the following. Coldness and blueness of the skin; great diminution of the volume and force of the pulse; shrinking of the features, with a corpse-like sinking of the eyeballs; more or less hurry and difficulty of breathing, with a short dry cough; a peculiar feebleness of the voice; coldness of the tongue and breath; a sensation of burning heat in the epigastric region; great thirst; more or less complete suppression of bile and urine; vomiting and purging of a rice-water fluid; torpor and drowsiness in a variable degree, but without delirium; and, lastly, cramps in the muscles. Most of these symptoms are present in every case of collapse; some, however, may be absent.

What is the pathological explanation of this remarkable train of symptoms? The one great central fact is this, that, *during the stage of collapse, the passage of blood through the lungs from the right to the left side of the heart is, in a greater or less degree, impeded.* Let us now consider the evidence of there being this impediment to the pulmonary circulation; and let us endeavour to ascertain the probable cause and consequences of this obstruction to the flow of blood. Very conclusive evidence as to the existence of impeded pulmonary circulation during life is afforded by the appearances observed in the heart, bloodvessels, and lungs after death. The *post mortem* appearances within the chest have been described, with more or less minuteness, by several authors; but by no one, I believe, with so much care and accuracy as by Dr. Parkes. (*Researches on the Pathology and Treatment of the Asiatic or Algide Cholera.*)

In the great majority of cases in which death has occurred during the stage of collapse, the right side of the heart and the pulmonary arteries are filled, and sometimes distended, with blood; while the left cavities of the heart are generally empty, or contain only a small quantity of blood; the auricle being partially and the ventricle completely and firmly contracted. The tissue of the lungs is, in most cases, of pale colour, dense in texture, and contains less than the usual amount of blood and air. With respect to the extremely anæmic condition of the lung, when death has occurred during the stage of collapse, there is an entire agreement amongst those authors who have most accurately described the

post-mortem appearances. There is something surprising, as Briquet and Mignot observe (*Traité Critique et Analytique du Cholera Morbus*), in the contrast between the almost constant occurrence of this extremely anæmic condition of the lung, from which scarcely even a few drops of blood flow when the tissue is cut, and the hyperæmia of most of the other viscera.

There is a remarkable contrast, too, between this anæmia of the lung when death has occurred during collapse, and the great engorgement of the lungs which is almost invariably found when death occurs in the febrile stage which often follows reaction.

Now, it is evident, from the appearances here described that, during the stage of collapse, there is an arrest of blood in the branches of the pulmonary artery *before* it has reached the pulmonary capillaries. The arrest at this point explains the remarkable anæmia of the texture of the lungs, while the hyperæmia of the lungs after reaction is due to engorgement of the pulmonary capillaries. Before I attempt to explain this remarkable arrest of blood, it may be well to allude briefly to certain phenomena in the living but collapsed patient which afford confirmatory evidence that the pulmonary circulation is greatly impeded. The impeded flow of blood through the lungs resulting, as it must, in a very scanty supply of blood to the arteries, accounts for the character of the pulse in cholera. It accounts, too, for the fact that the pulse has often been observed to increase in power and volume under the influence of venesection, which, by relieving the over-distension of the right cavities of the heart, increases their contractile power. (See Dr. Reid's essay, *On the Effects of Venesection in Renewing and Increasing the Heart's Action under Certain Circumstances.*)

Another appearance which receives explanation from the small stream of blood in the arteries, is that of the shrinking of the integuments, and especially the collapse of the features and the sinking of the eyeballs. The eyes of a patient in deep collapse are often as much sunk as those of a corpse; and the chief cause of this, in the case of both the cholera-patient and the corpse, is the more or less complete emptiness of the branches of the ophthalmic artery.

That the arterial stream during collapse is reduced to a minimum, is proved by the fact that arteries of considerable size have been opened during life without the escape of blood. Magendie states (*Leçons sur le Cholera Morbus*, p. 21) that on one occasion, he cut across the temporal artery of a patient in collapse and no blood escaped. ("Il ne s'écoula pas une goutte de liquide.") Scott says (*op. cit.*, p. 30) that the temporal artery has often been opened without the escape of blood. He also states that a surgeon, "despairing of other means, cut down upon the *brachial* artery; but so completely had the circulation failed, that no blood flowed"

While, therefore, the small and feeble pulse, the collapse of the features, and the occasional absence of hemorrhage from a wounded artery, are explicable on the supposition that the arteries receive a very scanty supply of blood, these phenomena afford evidence confirmatory of that derived from *post-mortem* appearances, that during the stage of collapse the passage of blood through the lungs is much impeded. It appears, therefore, that, during the stage of collapse, the blood which is sent into the pulmonary artery is, in great part, arrested in the minute branches of the artery before it reaches the capillaries of the lungs. What is the cause of this arrest of blood? Some writers have suggested that the blood has been rendered so thick by the loss of serum, that it cannot pass through the minute vessels. This theory is scarcely deserving of a moment's consideration. It is entirely at variance with the fact before referred to, that there is no direct relation between collapse and loss of fluid by the bowels; and, again, with the fact that the state of collapse passes off, while loss of fluid by purging continues, and while, therefore, the thickening of the blood which, according to this theory, has stopped its passage through the lungs, should be continually increasing. The suddenness with which collapse often occurs, is quite inexplicable by the theory that thickening of the blood through loss of its water is the cause of that condition. In illustration of the sudden occurrence of collapse, I may refer to the following passages in Sir William Burnett's Report on Cholera in the Black Sea Fleet in 1854. "The first to be attacked were men already on the list for diarrhœa, several of whom fell into a state of collapse one after the other; but, about the same time, robust healthy men, who had fallen suddenly down in a state of collapse, began to

be brought in from various parts of the ship, (the *Britannia*), even from the yards, where they were seized while reefing sails." And the surgeon on board the *Albion* reported that "the attacks in many instances were so sudden, that many men fell as if they had drunk the concentrated poison of the upas-tree." The supporters of this theory of blood-thickening as the cause of collapse would have us believe that, in the course of a few minutes, the blood of these robust men had become so thickened by loss of water as to be incapable of transmission through the minute vessels of the lungs. I shall hereafter show that the thickening of the blood is a *consequence* and not a *cause* of the arrest of blood in the pulmonary arteries.

I believe the true explanation of the arrest of blood in the lungs to be this. The blood contains a poison whose irritant action upon the muscular tissue is shown by the painful cramps which it occasions; the blood thus poisoned excites contraction of the muscular walls of the minute pulmonary arteries, the effect of which is to diminish, and in fatal cases entirely to arrest, the flow of blood through the lungs.

We have seen that the condition of the lungs after death during collapse affords conclusive evidence that the arrest of the blood occurs, not in the capillaries, but in the branches of the pulmonary artery, before the capillaries are reached by the blood. We know that the walls of the arteries are muscular, and that they have the power of contracting upon their contents under the influence of a stimulus, such as cold, electricity, or mechanical irritation. I suppose that no physiologist at the present day would deny that spasm of the arteries is as real a fact as spasm of the muscles.

Many experiments and observations prove that contraction of the muscular walls of the arteries has great influence on the passage of their contents. For instance, it is a well-known fact, that the tissues of an animal immediately after death cannot, without a force which endangers the integrity of the vessels, be injected with any of the fluids which are commonly used for that purpose. The coats of the arteries, so long as their vital tonicity remains, contract upon their strange contents, and impede the passage of the injection into the capillaries.

Nearly a century ago, Hales (*Statical Essays*, 1769) performed some ingenious experiments to demonstrate the power which arteries possess to control the flow of various liquids through them. His experiments were performed on animals recently killed: and he found that, while warm water passed very readily through the arteries, cold water, decoction of bark, and brandy, passed much more slowly.

Some experiments performed by Blake (*Edinburgh Medical and Surgical Journal*, vols. liii., liv., and lvi.) on living animals bear upon this question. He found that a concentrated solution of a salt and soda, when injected into the jugular vein of a dog, killed the animal in less than a minute. On examination after death, the right side of the heart was found greatly distended, while the left contained only a little black blood. A few grains of nitrate of silver in solution destroyed life in precisely the same way. The passage of blood through the lungs is arrested, and the animal dies with the right cavities of the heart distended while the left cavities are nearly empty.

The sudden arrest of the flow of blood through the lungs in consequence of the accidental admission of air through a wounded vein in the neck or axilla has some relation to this subject. The entrance of air has usually been indicated by a peculiar gurgling sound in the wound, and the symptoms which rapidly follow are thus described. (Dr. John Reid's *Physiological, Anatomical, and Pathological Researches*, p. 553.) "Speedy occurrence of syncope, which is either preceded by a cry, with the expression, 'I die,' 'I am dead,' 'I suffocate,' or by anxiety and tremblings. Or, without any such precursors, the syncope rapidly reaches such a degree that all consciousness is lost, and the patient falls down; cold sweat breaks out on the forehead; and, in a quarter of an hour, sometimes sooner, sometimes later, he is dead." After death, both in the human subject and in animals that have been the subjects of experiments, the right side of the heart is found to be much distended with frothy blood; and the same mixture of air and blood is usually found in the pulmonary arteries. The left side of the heart is usually empty; but a small quantity of frothy blood is occasionally found in the left cavities and in the aorta. The cause of death in these cases is the distension of the right side of the heart, which results from the impeded

transit of frothy blood through the vessels of the lungs. Mr. Erichsen found, by experiments on a dog recently killed, that beaten bullock's blood, mixed with air, required nearly twice the pressure to drive it through the pulmonary vessels, that would suffice to drive unmixed blood through the lungs. (*Edinburgh Medical and Surgical Journal*, vol. lxi.)

I have referred to these experiments in illustration of the general principle: 1, that the movement of blood through the lungs may be quickly arrested by the addition of some foreign ingredient to the blood; and 2, that this arrest is probably due to the power which the arteries possess to contract upon their contents.

The proof that the blood is arrested during the stage of collapse in cholera is, as before stated, partly the anatomical condition of the lungs after death, partly the symptoms observed during life.

About two years since, I had under my care in the hospital a woman (S. B.) who was suffering from dropsy, the result of heart-disease of long standing. On going through the ward one afternoon, I saw her sitting up in bed as well as usual. In less than five minutes after I left her to go into another ward, I was sent for in consequence of her having become suddenly worse. I found her gasping for breath, cold and pulseless, with a blue and shrunken appearance of the features, exactly resembling the collapse of cholera. I at first thought that she would die in a few minutes; but she rallied in some degree, and lived forty-eight hours, during which time her dropsical legs became rapidly gangrenous. We found, as I had predicted, that besides old standing disease of the mitral valve, there were firm fibrinous coagula in the branches of the pulmonary artery. The sudden obstruction of the pulmonary arteries by fibrin caused a state of collapse exactly resembling that of cholera. (Hospital Case-book, vol. xix. p. 59.)

The most interesting and conclusive evidence that arrest of blood in the lungs is the true key to the pathology of choleraic collapse, is to be found in the simple yet complete explanation which it affords of all the most striking chemical phenomena of the disease—the imperfect aëration of the blood, the fall of temperature, the dark and thickened appearance of the blood, and the suppression of bile and urine.

Chemical consequences of the obstructed flow of blood through the pulmonary arteries. —It is obvious that the stream of blood from the pulmonary capillaries to the left side of the heart is the channel by which the supply of oxygen is introduced into the system. One necessary consequence, then, of a great diminution in the volume of blood transmitted to the left side of the heart, must be that the supply of oxygen is lessened in a corresponding degree. This position probably will not be disputed by any one who will give the subject a moment's consideration. Nor again can it be denied or doubted that certain results must of necessity follow this limited supply of oxygen.

The combustion of those constituents of the blood which are normally subjected to the action of oxygen will be diminished in proportion to the deficiency of that gas; and thence follows simultaneously and of necessity a reduction of temperature, and so scanty a formation of urinary and biliary constituents, that, while the state of collapse continues, the functions of the kidneys and liver are virtually suspended. The blood at the same time has that black, thick, treacly appearance which is not peculiar to the collapse of cholera, but which is common to it with all diseases which are attended with a defective aëration of the blood. The blood has this character during the cold stage of a severe ague fit. Dr. Mackintosh and others, who have bled patients during the cold stage of ague, describe the blood as flowing from the arm at first in a slowly trickling stream, being of a dark colour, and not coagulable. (See Mackintosh's *Practice of Physic*, vol. i. p. 86 *et seq.*) Dr. Dundas Thomson, who published an elaborate paper on the Chemistry of the Blood in Cholera (*Med.-Chir. Trans.*, vol. xxxii. p. 67), states that one specimen of blood from a "patient who laboured under the affection of the mucous membrane of the air-tubes," contained a greater excess of solids, in proportion to water, than he had found even in cholera-blood.

The blood in cholera is black and thick only during the stage of collapse; in other words, during the stage of pulmonary obstruction and defective aëration. This state of the blood bears no relation to the loss of water; it comes on when the loss of water has been very trifling; it passes off rapidly,

while loss of water by purging continues unchecked. It is simply a result of defective aëration, just as the thick and smoky flame of a lamp is a result of defective aëration.

The constituents of bile and urine and carbonic acid are all results of oxidation; none of them can be formed without a large supply of oxygen. Suppression of bile and urine during the stage of collapse is a necessary consequence of the limited supply of oxygen which results from the obstruction of the lungs. The amount of carbonic acid expired during collapse is also much diminished. (See, on this point particularly, Twining's *Clinical Illustrations*, etc., 2d ed. p. 15.) One fact confirmatory of the view that the very scanty formation of bile, urine and carbonic acid during collapse is a result of the diminished supply of oxygen, is, that *the secretion of milk is apparently undiminished*. I have myself observed this fact, and it has been mentioned by several authors.[1] Thus Magendie states that, one of his patients having been delivered of a child a few days before she was seized with cholera, the secretion of milk continued so abundant through a first and a second collapse, which ended fatally, that it was necessary to empty the breasts, in order to relieve the pain which their distension occasioned. Now, if the other secretions are suppressed on account of the deficiency of water in the blood, why does the secretion of milk continue? Magendie says, because the blood reaches the breasts, and supplies the materials for their secretion, on account of those glands being nearer to the heart than the liver and kidneys, which being at a greater distance, do not receive the supply of blood necessary for the discharge of their functions! My explanation of this remarkable and instructive fact is simply this. The chief constituents of milk—casein, sugar, oil, and water—may be obtained from the blood without the addition of oxygen. The secretion of milk, therefore, continues during the stage of collapse; while the highly oxygenized secretions are suspended, their essential constituents being formed only in very minute quantities during that stage, on account of the defective supply of oxygen.

Explanation of the great temporary relief resulting from the injection of a hot saline solution into the veins.—No theory of collapse can be considered complete which does not give a satisfactory explanation of the great temporary benefit which immediately follows the injection of a hot saline solution into the veins. I have before referred to this subject; and I deferred my explanation until I had given some account of the phenomena of collapse.

I have adduced many facts and arguments in proof of the position that the essential cause of collapse is an arrest of blood in the lungs, occasioned by a spasmodic contraction of the muscular walls of the pulmonary arteries. If this be the actual cause of collapse, we might, *à priori*, expect that for a time it would be removed by the injection of a hot fluid into the veins. The temperature of the fluid injected by Dr. Mackintosh varied from 106° to 120°; but he states that "the good effects of the injection were rapid in proportion to the heat of the solution." (*Op. cit.*, vol. i. p. 365.) The hot fluid, rapidly mixing with the blood in the right side of the heart and in the pulmonary artery, would, as it were, dilute the poisoned blood and render it less irritating, just as diluents render the urine less irritating to an inflamed bladder or urethra. It is probable, however, that the chief action of the injection would be to relax the spasm of the minute arteries by its high temperature.[1] Thus, the impediment to the circulation being overcome, the blood rapidly flows on to the left side of the heart and the arteries, and the phenomena of collapse pass away with marvellous rapidity. The benefit, however, is of but short duration; for the primary cause of the impeded circulation—namely, the

[1] See on this point Magendie, *Leçons sur le Cholera Morbus*, 1832, p. 27; Dr. Hutchinson, *History and Observations on Asiatic Cholera in Brooklyn, New York, in* 1854, p. 10; Dr. Robertson, *Edinburgh Monthly Journal*, 1848, p. 393; and Dr. Gairdner, "On the Pathological Anatomy of Cholera," *Edinburgh Monthly Journal*, July, 1849.

[1] Dr. Parkes, who tried the injection in some cases, states that he did not see even the temporary vivifying effects which others describe. (*Op. cit.*, p. 219.) The probable reason of this is, that the temperature of his injection was too low. In one case, he says it did not exceed 98°; while in another it was "tepid." In the other cases, the temperature is not stated. I think, therefore, that Dr. Parkes's failure to do good by a tepid injection is confirmatory of my view, that the high temperature of the injection employed by Dr. Mackintosh and others had more influence than the mere mixture of water with the blood. I believe that the hottest room of the Turkish bath would quickly relax the spasm of the pulmonary arteries; and so, if it did not cause faintness, it might be a real help to recovery.

poisoned condition of the blood—being still in operation, and the originally hot solution being cooled down by its diffusion through the entire mass of the circulating blood, the stream of blood through the lungs will soon again be obstructed; and the patient thus passes into a state of collapse as profound as and more hopeless than before. It appears, therefore, that the hot saline injection into the veins, and the operation of venesection, when it rapidly relieves, as it often has done, the symptoms of collapse, have this effect in common, that they facilitate the passage of the blood through the lungs, and thus lessen that embarrassment of the pulmonary circulation which is the essential cause of choleraic collapse. But, whereas the hot injections act by removing the impediment which results from spasmodic contraction of the arteries, venesection acts by relieving over-distension of the right cavities of the heart, and thus increasing the contractile power of their walls.

In concluding this communication, I would implore those pathologists who have hitherto thought that the temporary benefit following injections into the veins affords conclusive evidence that collapse results from loss of water, to consider whether the explanation here offered is not at least as probable, as complete, and as consistent with all the known facts of the problem, as that which is commonly received.—*Brit. Med. Journ.*, Nov. 4th and 11th, 1865.

(*To be continued.*)

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Pettenkofer's Theory of the Mode of Propagation of Cholera.— Dr. Hermann Weber read before the Epidemiological Society, Dec. 4, 1865, a paper based on Prof. Pettenkofer's last publication on the subject, "'*Ueber die Verbreitungsart der Cholera*" (*Zeitschrift für Biologie;* Jahrgang, 1865, p. 323).

With regard to the question of contagiousness, Pettenkofer believes that the disease is propagated by human intercourse, and never without this; not by simple contact with the diseased or their excretions, according to the old theory of contagion, but by means of certain local accessory causes contained in the soil. Temperature, wind, moisture, or dryness of the atmosphere, and elevation of ground, are all not essential for the epidemic occurrence of cholera, although they may, under certain circumstances, exercise great influence on its course. The only indispensable conditions are, *human intercourse yielding the germ in the excretions of cholera patients, and the soil developing this germ into activity.*

The qualities of the soil considered as necessary for the development of the cholera-germ are—1. That it be porous—*i. e.*, permeable to air and water; 2. That water exist in a certain depth below the surface (ground-water or subsoil-water); and 3. That the soil be to some degree impregnated with the products of organic decomposition, especially those of excrementitious origin.

Respecting the first condition, Pettenkofer, and the members of the Bavarian Commission for the Investigation of Cholera in 1854, have found, without a single exception, that the soil in the towns and villages epidemically affected with cholera was porous; while localities built on impermeable rock were either entirely spared, or, at all events, exhibited only isolated cases. Several apparent exceptions were, on closer examination, found to confirm the law. The well-known researches of Boubée and Fourcault are in accordance with this law.

With regard to the presence of ground-water or subsoil water (landspring—"*Grundwasser*"—the first stratum of water reached at a certain depth below the surface, between about five and fifty feet), Pettenkofer points to the fact, generally acknowledged, that the cholera spreads with predilection along the course of rivers and in hollow situations; but he regards the water of the soil underneath the habitations as much more important than that of the more or less distant river; and maintains that, as a rule, those localities suffer more from cholera which lie nearer to the level of the ground-water, the distance of which from the surface may be regarded as depending on the first impermeable stratum of the soil. The fall of the impermeable stratum may be parallel to that of the surface, but is more usually not; if the former be greater than the latter, then elevation means greater distance from the ground-water, and probably greater immunity from cholera, but not otherwise. The level of the ground-water in the same locality may vary considerably in the same year and in different years; and on this fluctuation the varying degree of susceptibility of the locality for the cholera epidemics seems to depend. Under equal circum-

stances, the rise of the ground-water will cause a greater susceptibility by moistening a higher stratum of the porous soil, which is generally more impregnated with organic matters the nearer it is to the surface. It is the period of receding of the ground water from its greatest elevation which is most dangerous. As this occurs usually in July, August, and September, cholera usually makes its greatest ravages at that period; but the unfavourable condition of the soil, may, through unusual circumstances, occur in winter instead of in summer; and cholera epidemics may, as experience shows, occur in the midst of a Russian winter.

With regard to the cholera-germ itself, Pettenkofer assumes it to be contained in the intestinal excreta of cholera patients, but believes that it cannot produce cholera by itself, but must first undergo some change under the influence of the susceptible soil, and thus become developed. This interchange between the cholera-germ contained in the excreta and the soil may, he suggests, either take place in the soil, and the developed germ may be thence inhaled or otherwise introduced into the body, or it may take place within the human body itself, the product being the active germ.

Pettenkofer adds hygienic suggestions for the prevention of epidemics, based on his views.

Dr. Weber remarked that these views, though not yet altogether proved, were in accordance with the best ascertained facts, and deserved to be tested without loss of time. He added that the observations of the position and fluctuations of the ground-water might lead to other important discoveries, and alluded to the researches of Professor Buhl, of Munich, according to which the death-rate from typhoid fever, in Munich, was in intimate relation to the varying elevation of the ground-water in that town.—*Brit. Med. Journ.*, Dec. 16, 1865.

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Experimental Researches on Cholera.—Several interesting experiments have been conducted upon animals by Herr Thiersch, of Munich, and M. Robin. The latter injected the vomited and excreted matter of cholera patients into the trachea and veins of two dogs, and to a third dog he administered the matter vomited by a fourth dog, to which he had given the blood and serum of a cholera patient. In the three cases he observed the vomiting and other symptoms of cholera.—*Lancet*, Jan. 13, 1866.

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Albuminous Urine a Symptom of Cholera.—M. De Wouves, in a memoir just published, has demonstrated that albumen is present in the urine of all cholera patients some days before the more serious symptoms exhibit themselves. He does not attribute this fact to any disease of the kidneys, but he regards it as an important means of distinguishing between true cholera and diarrhœa.—*Ibid.*

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Cholera Cures.—The papers tell us that Prof. Tommasi, of Naples, has been employing in cholera one of the remedies recommended by the *Times*, subcutaneous injections of quassia! And that M. Rubio has obtained very satisfactory results from hypodermic injections of essential oil of mustard. In Spain, some doctors have employed as a cure, ligaturing of the limbs "to intercept the circulation, and preserve the animal heat;" a practice described by *Siglo Medico* as a grand discovery. [!] In Constantinople, *L'Union Médicale* informs us that one of the remedies used by the doctors is to make the patient drink his urine when vomiting and diarrhœa begin. Another remedy, highly praised by Signor Bruno, is what may be called the bellows cure—the poking the nozzle of a bellows into the mouth or œsophagus of the patient and so insufflating him; the theory being that the cholera victim is dying for want of air. The quassia experiments are not spoken of by those who made them with any sanguine feeling; but then they console themselves with the reflection "that it is premature to form any opinion of experiments made on the decline of an epidemic."

A medical man, writing at Naples, says: "The malady is rapidly on the decline, though I fear we shall not get entirely rid of it for a long time to come. On the whole, we have not suffered so much as the filth and conglomeration entitled her to. The more I see of the disease the more certain I am that its ravages might be entirely prevented by a house to house visitation, and an early treatment of premonitory symptoms. As to the treatment, this epidemic has again taught us nothing; many old remedies have been brought

up anew, and puffed, such as quinine and quassia injections, chlorodyne and opium; but the result has been the same as in other epidemics—about 40 or 50 per cent. of mortality of the *declared* cases, while the mortality from subsequent typhoid fever has been the greatest in those cases that have been treated by violent remedies, and chiefly by opiates and alcoholic stimulants. The disinfectants used chiefly have been sulphate of iron for the excreta, while the rooms, bedding, furniture, etc., have been fumigated with chlorine gas. In the military hospitals the rule has been that no one left the hospital (of the medical and other attendants) before having remained a few minutes in a room exposed to these fumigations. The exemption of Sicily (and of Rome) up to the present time is certainly in favour of the *excommunicatory* system; but then, again, on the other side, Leghorn and Genoa have been exempted, though a quarantine of only a few days was insisted on. In addition to this, it may be observed that the islands in the Bay, which, from their position are cut off from close communication with Naples, have not been afflicted except in one or two cases, which were evidently carried over from the city."

Our readers will note in the above a confirmation of the views of Dr. G. Johnson. We are told that "the mortality from subsequent typhoid was greatest in those cases that had been treated by violent remedies, *and chiefly by opiates and alcoholic stimulants.—Brit. Med. Journ.*, Dec. 16, 1865.

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Cholera in Paris.—In the final report of the sanitary department of the "Préfecture de Police" it is stated that the total number of deaths from the recent epidemic of cholera amounted to 6,383.

There has been no fatal cases since the 14th of January.

CLINICS.

CLINICAL LECTURES.

Clinical Remarks on Locomotive Ataxy.—Two cases of locomotive ataxia treated in the Aberdeen Royal Infirmary by iodide of potassium with partial benefit, are reported in the *Med. Times & Gaz.*, Jan. 20, 1866, with the following interesting clinical remarks on this very unmanageable affection:—

"Locomotive ataxy is commonly mistaken for paraplegia. The features of each are so distinct that it is surprising physicians did not sooner recognize the difference. Duchenne's vague definition of locomotive ataxy is, 'Progressive abolition of the co-ordination of movement, and apparent paralysis, contrasting with integrity of muscular power; these are the fundamental characters of the disease.' Trousseau's is more definite, but commits science to what is yet but theory—'A spasmodic neurosis characterized by a want of co-ordination of the voluntary movements, often complicated with disorders of sensibility and partial paralysis.' The chief feature of the disease, when fully formed, is more or less inability to perform the reflex functions of standing or walking. On attempting to walk the patient finds his legs refusing to obey the ordinary co-ordinating power; they are thrust outwards or forwards spasmodically, and planted on the ground in an irregular way beyond the control of the individual, who is in constant danger of losing his equilibrium. If he succeeds in getting a start he moves forward in a precipitate manner, staggering and stumbling, and is obliged to use a staff to prevent himself from falling. A paraplegic patient, on the other hand, if able to assume the erect posture, drags his legs slowly, but uniformly along, his difficulty being not to control the movements of his legs, but to get them to move at all. The most characteristic differences between locomotive ataxy and paraplegia are the following: First, *in bed*, the patient with the former affection has complete power over the voluntary movements of the legs, as was well seen in the two cases recorded, both of whom tossed about their legs with the utmost facility, and defying all attempts to hold them, while in paraplegia the power of voluntary motion is in a greater or less degree lost; secondly, in locomotive ataxy, if the eyes be shut, the patient can no more walk or even stand, with his feet together than a person can stand or walk on stilts who has never been accustomed to them, while nothing similar is observed in paraplegia, or indeed any other kind of paralysis. In fact, a patient with ataxy closely resembles a tyro endeavouring to walk upon stilts. These diagnostic marks are, therefore, very important, and ought not to be overlooked.

"Locomotive ataxy seldom comes on

without premonitory symptoms. The chief of these are rheumatic pains, partial and temporary attacks of paralysis, and disorders of urinary and generative organs. The pains are irregular, coming and going, and are generally mistaken for rheumatism. They were so in the girl S——; but that they were not rheumatic was at once evident from the fact that they were confined to one knee and ankle—a point of some importance, for rheumatic pains of this kind are mostly due to lesion of the nervous system. There does not appear to have been any other premonitory symptom in this girl, except amaurosis, which was, however, but slight, and the excessive pain on the one side of the head. Amaurosis is a very common symptom, as also paralysis of the third and sixth nerves, and indeed of any nerve. The paralysis of the ocular nerves is, in general, more persistent than that of others. Transitory attacks even of hemiplegia may occur, and it is singular that the father of the girl S—— was thus affected, although there is no history of ataxy in him. The premonitory symptoms in the man M—— were partial paralysis of the left facial nerve, and at one time what looks very much like incontinence of urine. He also had cutaneous anæsthesia, which is a frequent attendant on the disease.

"The usual post-mortem appearances found after death in these cases are gray degeneration of the posterior columns of the spinal cord, and atrophy of the posterior roots of the spinal nerves. So long as the posterior columns were believed to be the channel for the transmission of sensitive impressions to the brain, this state of parts existing with little or no loss of sensation, but with loss of the reflex power of standing and walking, was rather perplexing, especially as the anterior columns were free from disease; but since the experiments of Brown-Séquard have shown that the posterior columns have not the office formerly assigned to them, and moreover that section of them causes hyperæsthesia, instead of anæsthesia, together with locomotive ataxy, the pathology is more intelligible. But how does it happen that with atrophy of the posterior roots there is often little or no loss of sensation? The explanation given is, that the hyperæsthesia which would be produced by disease of the posterior columns alone is counteracted by the atrophy of the posterior roots, in which some nerve tubes remain intact, sufficient to account for the persistence of sensation. This may be true, but it is not quite satisfactory. It is to be regretted that the state of the sympathetic nerve has not received the attention it deserves. There seems evidence to show that that nerve has more to do with reflex motion than has generally been supposed. Last year M. Voisin presented to the Société de Médecine of Paris a case of locomotive ataxy of the upper extremities where the cervical sympathetics were found diseased.

"An attempt has been made to distinguish locomotive ataxy caused by disease of the posterior columns from that caused by cerebellar disease. I am afraid this will be found impossible in practice, at least in many cases. It may be possible to diagnose the locality of the lesion, whether in the cerebellum or in the spinal cord; but that both varieties belong to the same category I have no doubt. For, in ataxy from spinal disease, we also find sometimes structural change in the optic nerve, the optic tract, the corpora quadrigemina, and the motor oculi, without disease in the cerebellum; and yet in some cases of so-called ataxy, the only lesion found has been cerebellar. The ataxy likewise is not confined to the legs, but may proceed to the upper extremities, or even affect them solely, as in Voisin's case just mentioned. The cerebellar and spinal disease are, therefore, probably varieties of the same evil, the ataxy being the symptom. And here I may be permitted to quote some observations of Dr. Hughlings Jackson. Speaking of cases of paralysis of one or more cranial nerves, with paralysis of both legs, and no paralysis of the arms, except now and then a little paralysis of the hands or fingers, he says: 'One of three inferences may be drawn from these facts. 1. The symptoms may by some be considered to occur together by a coincidence. 2. That the paralysis of the cranial nerve is the result of reflex action, set up by the disease of the cord which produces the paraplegia. This is the explanation given by Dr. Brown-Séquard. 3. That there is a tract in the higher part of the nervous system which contains nerve-fibres from the legs and not from the arms, or, at least, only from the fingers or hands. Some of these cases resemble, and perhaps are locomotive ataxie. There is in some a loss of power in walking

properly, whilst the legs seem to retain considerable power. This, of course, applies only to those whose sight is merely impaired. When the guiding power in the legs is lost, we use the eyes to direct our movements. Even in health 'we lean,' says a distinguished physiologist, 'on our eyesight as on crutches.' Patients who have ataxie, therefore, cannot walk in the dark, or when their eyes are shut. Blindness, following loss of guiding power in the legs, seems then to be not so much a complication as the loss of a similar faculty. But, when the patient has lost both these helps to guide himself, it is just possible that he may struggle his way from object to object by touch. But a third factor in the general power to guide movements is frequently affected also, there is numbness of the fingers; so that the power to combine movements in the legs, or to do so in a supplementary way by help of the eyes, or of touch, is lost altogether. This, I think, renders it plausible that there may be in the higher parts of the nervous system a tract of nerve fibres passing from the legs, fingers (tips) to the corpora quadrigemina for the general purpose of guiding movements in progression.'

"The prognosis of locomotive ataxy is bad. Patients, if they do mend for a little time, mostly go from bad to worse till they can no longer maintain themselves in the erect posture, and die cachectic. Various remedies have been tried. Electricity and nitrate of silver are favourite remedies with some, but not much confidence can be placed in them. There is this comfort, that the disease may remain stationary for many years."

MEDICAL NEWS.

DOMESTIC INTELLIGENCE.

Mütter Pathological Museum of the College of Physicians.—We would invite the attention of the profession to the following circular issued a short time since by the committee having this museum in charge:—

HALL OF THE COLLEGE OF PHYSICIANS,
N. E. corner Thirteenth and Locust Sts.

The Museum Committee of the College of Physicians having in charge the Pathological Museum of the late Dr. MUTTER, desire to add to it such Anatomical and Pathological specimens of interest as are now in the hands of physicians, or such as may be met with in their practice.

The Committee, therefore, solicit donations, which in every instance should be accompanied by a history of the case, or a reference to a medical journal containing such record. All interesting specimens presented to the College will be labelled with the donor's name, and placed in the Museum for permanent preservation.

Specimens addressed to the Curator may at any time be sent to the Hall of the College of Physicians.

J. R. PAUL, M. D.,
WM. HUNT, M. D.,
S. WEIR MITCHELL, M. D., } *Committee.*
THOMAS G. MORTON, M. D., *Curator.*

PHILADELPHIA, Nov. 1865.

Philadelphia County Medical Society — At the annual meeting, held on the 17th day of January, ult., the following officers and delegates were duly elected:—

President, Dr. William Mayburry.

Vice-Presidents, Drs. Robert Burns and William L. Knight.

Recording Secretary, Dr. Wm. B. Atkinson.

Assistant Recording Secretary, Dr. A. Y. Evans.

Corresponding Secretary, Dr. Henry St. Clair Ash.

Treasurer, Dr. Andrew Nebinger.

Censor, A. H. Fish.

Delegates to the American Medical Association.—Drs. H. St. Clair Ash, W. L. Atlee, Robert Burns, C. S. Boker, A. Cheeseman, James M Corse, David Gilbert, N. L. Hatfield, George Hamilton, Wilson Jewell, Wm. L. Knight, Jas. J. Levick, Wm. Mayburry, Andrew Nebinger, Winthrop Sargent, E. B. Shapleigh.

The delegates to the American Medical Association from the Medical Society of the State of Pennsylvania who are members of the Philadelphia County Medical Society are: Dr. L. P. Gebhard and Dr. J. Henry Smaltz.

Delegates to the Medical Society of the State of Pennsylvania.—Drs. H. St. Clair Ash, W. L. Atlee, C. S. Boker, Jno. Bell, W. H Bunn, James M. Corse. Joseph R. Coad, R. J. Dunglison, H. Y. Evans, Lewis P. Gebhard, A. W. Griffiths, Thomas Hay, A G. B. Hinkle, H. Lenox Hodge, Wilson Jewell, A L. Kennedy, J. F. Lamb, Joseph Leidy, R. H. Lee, A. S. McMurray,

A. Nebinger, B. Price, W. M. L. Rickards, W. Sargent, A. M. Slocum, L. S. Somers, J. H. Smaltz, J. G. Stetler, S. N. Troth, L. Turnbull, Ellerslie Wallace, Charles F. Wittig.

The following is a list of the *ex-officio* delegates from Philadelphia to the medical society of the State of Pennsylvania: Drs W. B. Atkinson, D. Francis Condie, A. H. Fish, N. L. Hatfield, William Mayburry.

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Jefferson Medical College.—The catalogue of this school shows that the number of medical students in attendance on the lectures during the session of 1865-6 was 428.

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Harvard University.—A chair of comparative anatomy has recently been established in the Medical Department of this University, and Prof. Jeffries Wyman, one of the most accomplished and erudite anatomists in this country, has been appointed to fill it.

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Medicol Journalism.—Medical journals are starting up in this country with astonishing rapidity. We have already received five new journals, viz: "The Richmond Medical Journal;" "The Savannah Journal of Medicine;" "The Medical Record," published in New York city; "The Cincinnati Journal of Medicine;" and "The Galveston Medical Journal." The announcement of five others, proposed to be published, have been sent to us, viz: "The Detroit Review of Medicine and Pharmacy;" one at Indianapolis, the title of which is not given; "The New Orleans Medical Journal;" "The Atlanta Medical Journal;" and "The Medical and Surgical Journal," (Memphis, Tenn).

Whether this is a propitious period for such a rapid multiplication of journals, or the profession are rich enough to furnish them material support, time can best determine.

Without wishing to repress the ardour of the projectors of these enterprises, we may state the fact that in the most prosperous times not more than two or three journals ever received sufficient literary or pecuniary support, and we can only express the hope that it may prove otherwise at present.

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Obituary Record.—It is with profound regret that we record the death of Lieut. Col. Richard H. Coolidge, M. D., lately one of the Medical Inspectors U. S. A. and, at the time of his death, Medical Director of the Department of North Carolina. This sad event occurred at Raleigh, N. C. on the 23d of January, 1866. Dr. C. was one of the oldest surgeons of the regular army, having been in the service a period of upwards of twenty-five years. For many years he was on duty in the Surgeon General's office, during which period he compiled two large volumes of Army Medical Statistics, and a large volume entitled "Army Meteorological Register," embracing the observations made during twelve years by the medical officers at the different military posts of the United States. Those works display remarkable industry, intelligence, and judgment. By his death the service has lost one of its brightest ornaments. He was a gentleman of highly cultivated mind, a lofty sense of honour, great courtesy and modesty, amiable, charitable, and devoted to his profession and to the service. He was stationed for two years in Philadelphia, where his social qualities, his courtesy, integrity, and highly cultivated mind made warm friends of all who had the privilege of his acquaintance.

FOREIGN INTELLIGENCE.

Death from Chloroform.—Another death from chloroform has occurred: it was at St. Mary's Hospital. The patient was an apparently healthy man, and the operation was evulsion of the nail. Chloroform was administered on a handkerchief; all the proper precautions had been taken.—*Lancet*, Jan. 27, 1866.

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Extensive Employment of Chloroform.—Prof. Simpson states (*Med. Times & Gaz.*, Dec. 16, 1865) that Messrs. Duneau, Flockart & Co., of Edinburgh, now make upwards of 7,000 doses of chloroform every day, counting two drachms as a full dose, or nearly 2,500,000 doses a year.

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Etherization.—M. Velpeau has communicated to the Academy some remarks of M. Pétrequin, of Lyons, about etherization. Ether, employed by Dr. Jackson in 1846, was replaced by chloroform in 1849. Chloroform, as a chemical body, was discovered by MM. Soubeiran and Pelouze; and its physiological action was tried for the first time by M. Flourens. But, if chloroform

acts more rapidly than ether as an anæsthetic, it is also more destructive in its effects; and consequently surgeons in the south of France never employ it. M Buisson, in a work which received a recompense from the Academy some years ago, wrote against chloroform—an agent "wonderful and terrible," as Flourens said of it. M. Pétrequin now tells us that for fifteen years the surgeons of Lyons have employed ether only, and that they have never lost a patient. M. Velpeau hereon observed, that fatal accidents had been much more frequent abroad, and especially in England, than in France, and in the departments of France than in Paris. Much, therefore, depends upon the care with which chloroform is used. He had himself put thousands of patients under chloroform, and had never met with the slightest accident.—*Brit. Med. Journ.*, Jan. 6, 1866.

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Contractile Cells of Syphilitic Pustules.—It has been pointed out by Herr Szabadfoldy that the cells removed from syphilitic pustules exhibit peculiar movements like those of the amœba and other protozoa. In many cases the projected processes become so numerous that the cell has the appearance of being clothed with cilia. Round cells frequently became oval, and underwent many other changes of form. In some, an internal molecular movement was distinctly seen.—*Lancet*, Jan. 13, 1866.

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Inoculation of Tuberculous Matter.—M. Villemin informs the Academy of Sciences that, by means of inoculation of tuberculous matter taken from man, he has produced tubercular disease in rabbits. Softened tubercle was inserted under the skin near the ear of the rabbit; and, in the course of six or eight weeks, tubercles visible to the naked eye were found in the lungs, mesentery, intestines, etc., of the rabbit. The experiment has been successfully repeated a great number of times, and under different conditions.—*Brit. Med. Journ.*, Jan. 6, 1866.

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Influence of Water in the Production of Milk.—M. Dancel has noticed that women, when suckling, drink a great deal more than at other times. Cows, too, before they drop a calf, will be satisfied with from 12 to 20 quarts of water a day, but afterwards they require 30, 40, or 50 quarts. He notices also that cows fed in houses on dry food give a fourth or even a third less milk than when at pasture. He states, too, that cows fed upon dry sesame-cake gave very little milk until they were freely supplied with water. He concludes from all this that water has a good deal to do with the secretion of milk. —*Chemical News.*

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Production of Organisms in Closed Vessels.—Dr. Child has come to the conclusion that there is no doubt of the fact that *bacteria* can be produced in hermetically sealed vessels containing an infusion of organic matter, whether animal or vegetable, though supplied only with air which has passed through a red-hot tube, and though the infusion be thoroughly boiled. The germ of *bacterium* must therefore be either capable of resisting the boiling temperature of a fluid, or they are spontaneously generated, or they are not organisms at all. Dr. Child is convinced that they are minute vegetable forms; and says that Powell and Lealand's fiftieth digestive has already shown something like an appearance of structure in these minute *bacteria*, which leaves no doubt about their organic character.—*Quar. Journ. of Science*, July, 1865.

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Muscular Power of Insects.—M. Plateau, in a communication to the Académie des Sciences, observes that, believing the muscular power of the invertebrata has not sufficiently attracted the notice of physiologists, he has instituted a series of experiments upon insects, from which he draws these conclusions: 1. Independently of their power of flight, insects possess, in relation to their weight, enormous power, as compared with the vertebrata. Thus, while a powerful horse can only exert during some instants an amount of traction effort equivalent to about two-thirds of its own weight, the common cockchafer will exert a traction equal to fourteen times its weight. This amount of power is also considerably less than that possessed by other of the coleoptera, the most vigorous of these upon which the experiments have been yet tried being the *donacia nymphææ*, which exerts traction power equivalent to forty-two times its weight. 2 When we compare two species of insects of the same group which differ notably in weight, it is the smallest and lightest which exhibits the greatest proportionate power. 3. These results are not

due to the muscles being relatively more voluminous in the smaller animals, but to their being endowed with a greater energy and muscular activity.—*Med. Times and Gaz.*, Jan. 13, 1866.

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Action of Light on Animal Matter.—Some novel experiments have been lately described before the Chemical Society of Paris, by M. Jodin, illustrating the action of light on vegetable matter. The author destroys the vitality of green leaves by immersing them in alcohol, or heating them to a high temperature in sealed tubes, and finds that after this the leaves still present some signs of life. In the light they are rapidly decolorized, but excluded from air and light they preserve their greenness for an indefinite time. In the course of the decoloration by solar light, he proves that oxygen was absorbed and carbonic acid evolved Under the same circumstances he finds the yellow matter in etiolated leaves to absorb oxygen. On the contrary, it is proved that etiolated leaves, in becoming green in the light, evolve oxygen, while those kept in the dark and unchanged in color absorb oxygen. The author is disposed to regard chlorophyll as a body quite distinct from the yellow colouring matter of leaves.—*Quar. Journ. of Science.*

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Cinchona Plantations in Bengal—The last report on the cultivation of cinchona in Bengal states that during the months of July last, 14,000 cuttings were planted, a greater number than has ever been obtained at Darjeeling. The total number of plants, cuttings and seedlings amounts to 81,000 The altitude at which the plantations are situated varies from 1825 feet to 5500 feet above the sea level.—*Lancet*, Jan. 13, 1866.

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Indian Cinchona Bark.—Mr. M'Iver has analyzed the cinchona bark grown in India, and does not appear to report very favoura bly of its percentage of quinia. He recommends the medical profession to try the cinchonidine, an alkaloid largely present in the Indian specimens.

—

Railway Surgery.—The guards of the trains on the Swedish railways are required to have a knowledge of the elements of surgery, that, in the case of accidents, they may be able to render medical assistance. An ambulance, fitted up with every requisite, forms part of each train.

Honours to Medical Men.—The Queen of Great Britain has conferred the dignity of Baronetcy upon William Fergusson, the eminent surgeon of London; upon Dr. Dominick Corrigan, formerly President of the Royal College of Physicians of Ireland, and one of the most distinguished physicians of Dublin; and upon Professor James Y. Simpson, of Edinburgh, who has well earned any distinction that may be conferred upon him.

—

Obituary Record.—The Vienna journals announce the death of Professor Schuh. Whilst in perfect health, he was suddenly struck down by virulent typhus. He was buried on Christmas Eve, after an illness of only five days. The death of this highly esteemed man appears to have made a great sensation amongst his medical brethren. The *Wiener Medizinische Wochenschrift* speaks of him as "one of the best and noblest men we ever knew—a kind physician; an excellent teacher, full of learning; an indefatigable worker; a friend inspired with a love of all that is beautiful and true in art and in life; a man whose loss is irreparable, and over whose memory we shall mourn as long as we are here to mourn." Many thousand friends attended his funeral. The whole of the professors of the Medical Faculty were there, besides many professors of the other faculties. All the students of medicine, with the Hungarians in national costume, bearing torches, were present. It is mentioned as a remarkable fact, that the well-known operator, Kern, Schuh's predecessor, also died on the 22d, and was buried on the 24th of December.—*Brit. Med. Journ.*, Jan. 6, 1866.

Died, in January last, at Magdeburg, Dr. Julius von dem Fischweiler, at the advanced age of 109.

—— On the 13th Jan., at Ryde, Isle of Wight, aged 74, Sir John McGregor, K. C. B., Deputy Inspector General.

—— At Pisa, Italy, Jan. 17, aged 72, Sir John Hall, M. D., K. C. B., &c.

—— At Edinburgh, Jan. 14th, 1866, Dr. David James Simpson, eldest son of Prof. J. Y. Simpson, aged 24 years. This young physician had given the highest promise of future distinction and usefulness, and had already proved himself worthy of the name he bore. The whole profession in this country, as well as in Great Britain, will deeply sympathize with his eminent father in his very sad bereavement.

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CHOLERA.

Notes on the Pathology and Treatment of Cholera. By GEORGE JOHNSON, M. D., F. R. C. P., Professor of Medicine in King's College. (Continued from p. 40.)

The evidence of the existence of a morbid poison in the blood as the cause of cholera.—In a previous communication I stated that the presence of a morbid poison in the blood, as the essential cause of cholera, is very generally admitted. There does, however, exist some scepticism with regard to this point; and, therefore, it seems not undesirable to state briefly the chief facts and arguments which are in favour of the doctrine in question.

Now, the proofs of the existence of morbid poisons are to be found mainly in the history of the diseases to which they give rise, and in the impossibility of giving a rational interpretation of the morbid phenomena without assuming the existence of some morbific agent. Neither chemistry nor the microscope has thrown any light on the essential nature of morbid poisons. "It is the human body," as Dr. Carpenter well observes (*Human Physiology*), "which forms the appropriate testing-apparatus for morbid poisons; and even if we could always obtain them in a separate state, and could subject them to chemical analysis, we should know much less of their most important properties than we can ascertain by observations of their actions in the system; this alone affording the means of judging of their *dynamical* character, which is of far more importance than a knowledge of their chemical composition."

The hypothesis, that a poison in the blood is the cause of the gastro-intestinal symptoms of cholera, is supported by many analogous facts. For instance, vomiting and diarrhœa not unfrequently result from breathing air which is contaminated by the exhalations from decomposing animal mat-

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ter. Thus Dr. Christison states (*Treatise on Poisons*, 4th ed., p. 636) that M. Ollivier, "while visiting a cellar where old bones were stored, was seized with giddiness, nausea, tendency to vomit, and general uneasiness; and subsequently he suffered from violent colic, with profuse diarrhœa, which put on the dysenteric character, and lasted for three days."

Breathing the air of the dissecting room and the dead-house is a common cause of diarrhœa; and Mr. Simon (*Lectures on General Pathology*, p. 231) remarks upon the instructive fact that when a diarrhœa has been excited by dissecting animals whose flesh has a peculiar odour, this odour may sometimes be detected in the evacuations of the patient. Some years since, I was present while a medical friend examined the dead body of a patient who had died of cancer of the bladder and bowel. The stench was singularly strong. Within a few hours, my friend was seized with diarrhœa; and he noticed that his stools had the strong and peculiar odour which had pervaded the room when the body was being examined. In such cases as this we have conclusive evidence that fetid gases may pass, with the inspired air, through the lungs into the blood, and thence be eliminated through the bowels. Can it be beneficial to prevent or retard that process of elimination?

It has been proved by experiments on animals, that many of the symptoms of cholera may result from the injection of putrid matters into the blood. Mr. Henry Lee, in his *Pathological and Surgical Observations*, describes several experiments of the kind which were followed by vomiting, diarrhœa, difficult breathing, great prostration, and death.

The remarkable arrest of blood in the branches of the pulmonary artery, which I have shown to be the essential cause of choleraic collapse, has its exact analogy in the arrest which is caused by the injection of certain salts into the blood, or by the admission of atmospheric air into the veins.

Evidence of blood-poisoning in cholera may be derived from a consideration of the *symptoms of invasion*, as they have been called. The pathological theories which have unhappily prevailed in this country have led to an undue regard being paid to diarrhœa as a premonitory symptom of cholera; and to an almost entire disregard of other symptoms, to which the Indian practitioners attach great importance. The symptoms in question are those indicative of general discomfort and derangement of function, particularly affecting the nervous system. Twining says (*op. cit.*, p. 9): "Prior to the more distinct and alarming attack, there are sometimes for a few hours, and in some cases for two or three days, symptoms of indisposition, evident not only to the patient himself, but to his friends. When cholera is raging severely, the disease is often ushered in by diarrhœa; at other times, it begins with catarrh, nausea, and oppression at the scrobiculus cordis, which are not in an early stage to be distinguished from the slight indisposition which often precedes fever. The approach of cholera in this manner makes the patient suppose he is feverish or bilious; and *if recourse be had to some of the medicines commonly used in slight ailments of that sort, the disease is said to be caused by the dose of medicine taken, when, in fact, it had been insidiously making progress for some hours.*" In this country, it has not unfrequently been asserted that an attack of cholera has been caused by the operation of a rhubarb pill or a dose of castor oil. I can give a parallel to this *post hoc ergo propter hoc* argument. Some years since, when I was seeing out-patients at the hospital, a woman brought a child who was suffering from febrile symptoms, and for whom I prescribed a mixture containing nitrate of potash. Two days afterwards the mother returned, and said in a complaining tone, "Your medicine has brought out the smallpox." Truly the smallpox had come out; but certainly it was in the blood before it came into the skin. So, when symptoms of cholera follow speedily on the action of an aperient, the morbid poison was before in the blood, and probably caused the feeling of derangement for which the dose was taken. It is as probable that smallpox might result from rubbing croton oil on the skin, as that a specific disease like cholera would be caused by a purgative.

Annesley gives an extract from the letter of "a zealous and intelligent medical officer," who strongly insists on the great practical importance of studying the initiatory symptoms of cholera. Referring to the purging, vomiting, and spasms, his correspondent says: "I am so thoroughly convinced that these symptoms are only secondary, that, were the following marks

present, I should not hesitate to pronounce the case one of epidemic cholera. As the patient is approached, an appearance of overpowering lassitude is at once perceived, with a pallid, anxious, and sorrowful cast of countenance; and, in more advanced stages, the countenance is dejected and sunk." He then refers to a case in which he observed this peculiar expression of countenance; and, feeling confident that cholera was impending, he kept a close watch upon the man. After an interval of nine hours, vomiting, purging, and cramps set in.

Bell and Orton (*op. cit.*) describe the initiatory symptoms of cholera in much the same terms as Annesley; and Dr. Paine, whose experience of the disease was obtained in New York, says: "Diarrhœa and vomiting do not always distinguish the premonitory stage; but it is sometimes denoted only by headache, loss of appetite, oppression at the chest, etc.; and, again, spasms are known to have been the earliest symptom, and at first the only prominent one." These symptoms of general derangement, which often attend the invasion of cholera appear to be strictly analogous to those which mark the commencement of other undoubted zymotic blood diseases.

Again, Orton and others of the Indian authors have remarked on the striking resemblance between the symptoms of cholera and those which result from the bite of a snake or other venomous animal. The venom of these animals unquestionably enters the blood, and thus often destroys life. So, it is probable, does the cholera poison enter the blood.

Another fact, which is almost certainly indicative of a morbid condition of blood in cholera, is the frequent occurrence of albuminuria during the progress of the disease. This symptom, in connection with cholera, cannot, I think, be the result of a merely passive congestion of the kidney. Much more probably it is due to an active congestion excited by a morbid quality of blood.

One of the most conclusive arguments in favour of the doctrine that a morbid poison in the blood is the essential cause of cholera, is based upon the fact that the worst symptoms of collapse have often been observed to follow immediately upon the arrest of the vomiting and purging by opiates and astringents. The first case which painfully convinced me of the fatal mischief which may result from the treatment of diarrhœa by opium, occurred during the cholera epidemic of 1849. A woman, about forty years of age, was seized with the usual symptoms of choleraic diarrhœa—vomiting, purging, and cramps. She had not a symptom of collapse. The countenance was natural, the skin warm, the pulse good. I gave her five grains of Dover's powder every hour until three doses had been taken. When I saw her again, in about three hours from the time of my first visit, the vomiting, purging, and cramps had ceased; and she was in full collapse, from which she never rallied. This case gave a terrible shock to my belief that collapse is a consequence of loss of fluid, and that it is to be prevented by arresting the vomiting and purging which usually precede and accompany the symptoms of collapse. I saw no way of escape from the painful conviction, that my patient's condition had been made fearfully worse by my well-intended but mischievous interference. Since that time I have had frequent opportunities of ascertaining from the published reports of cases, and from what I have seen in the practice of others, that the immediate occurrence of profound collapse is a not uncommon result of the sudden arrest of the vomiting and purging by opium. The salutary and curative efforts of Nature, the vomiting and purging, by which the morbid poison is being eliminated, are thus arrested, the poison then accumulates in the blood; the flow of blood through the lungs becomes obstructed; and the state of collapse is established.

MM. Briquet and Mignot have published some instructive particulars of the results obtained by them in the treatment of diarrhœa by opium. (*Op. cit*, p. 514.) Their practice was to prescribe rest, rice-diet, and from fifteen to thirty drops of "laudanum of Sydenham;" the dose to be repeated in an hour, and to be followed by opiate enemata, if necessary. In obstinate cases, they gave altogether as much as from eighty to a hundred drops of laudanum. The result of this practice was, that, out of 200 patients who came under treatment at the commencement of the attack ("dès le début des premiers accidents") no fewer that twenty-six, that is, 13 per cent., passed into collapse. This, I have good reasons to believe, is a far larger proportion of cases of collapse than would ordinarily occur if choleraic diarrhœa were allowed to take its own course and

terminate, as it tends to do, in spontaneous recovery. Those who advocate the use of opiates and astringents in the treatment of choleraic diarrhœa appear to forget that there is such a result as spontaneous recovery and they claim the credit of a cure in every case of diarrhœa so treated which does not pass on to collapse. During the last epidemic of cholera (in 1854,) the late Mr. Wakefield stated, in a letter to the *Times*, that in a large number of cases of diarrhœa occurring amongst the prisoners at Cold Bath Fields, the only medicines which he gave were carbonate of soda and mint-tea; and not a single case passed into collapse. It can scarcely be supposed that this plan of treatment had any other effect than to dilute the contents of the bowel, and so to assist their speedy expulsion—a mode of operation entirely different from that of opium and astringents.

Mr. French states, with reference to the treatment of diarrhœa (*The Nature of Cholera Investigated*, 2d ed., 1854, p. 75): "I am satisfied from much experience, that cases of epidemic diarrhœa generally subside speedily under the use of the simplest possible remedies which are wholly free from astringent properties." In this statement I entirely concur.

But it may be asked how it could happen, if there be a morbid poison in the blood the escape of which it is dangerous to arrest by opium, that so large a proportion as nearly seven-eighths of MM. Briquet and Mignot's patients escaped without more serious consequences? Ought not the whole number thus treated by opium to have passed into a state of collapse? To these questions it may be replied that, happily for the patients, in a large proportion of cases, the diarrhœa continues, in spite of repeated doses of opium, for a period varying from a few hours to several days; and, in such cases, it is reasonable to suppose, that the curative efforts of Nature succeed in eliminating the morbid poison from the blood, notwithstanding the opposing influence of the drug.

During the last epidemic of cholera, I saw several cases in which a diarrhœa had for some days gone on, in spite of large and repeated doses of opium and astringents. In each of these cases, the diarrhœa quickly ceased after the exhibition of one or two doses of castor oil. And it is evident that the experience of MM Briquet and Mignot was in perfect agreement with this; for they state that if, in spite of the energetic employment of opium, the diarrhœa continues for a period of two days, opium is then of no avail; and they have found in such cases that an emetic of ipecacuanha has immediately put a stop to the disease. It is probable that a diarrhœa which thus continues for several days while opiates are being given, and which is so speedily arrested by an emetic or a purgative, is due, not to the continued presence of a morbid poison in the blood, but rather to the local irritation of the mucous membrane of the digestive canal by the morbid secretion which has been poured into it, and the complete escape of which has been retarded by the opium

The peculiar character of the intestinal discharges in cholera affords some evidence of blood poisoning.

Boehm (*Die Kranke Darmschleimhaut in der Asiatischen Cholera*, 1838) was the first to publish the fact, that the secretions discharged during life, and those which are found in the bowels after death, contain a large amount of epithelium.

The flocculi in the rice-water stools consist almost entirely of perfectly organized epithelial cells, most of them of large size. Of this fact, I have satisfied myself by repeated examinations of the discharges from different patients. The peculiar creamy viscid secretion, which sometimes nearly fills the small intestines after death, is also almost entirely made up of the same fully formed epithelium. Now, it is obvious that this large amount of epithelium cannot be explained by the peeling away of one or two layers of cells from the surface of the mucous membrane—the result of a local irritation during life, or of maceration by the fluid contents of the bowel after death. This abundant cell formation can result only from a very active vital effort. And if the object of that cell-growth be not to withdraw from the blood some morbid products —some constituents of the blood or of the tissues which have been damaged by the morbid poison—it is difficult to suggest any explanation of the phenomena.

The desquamation of the skin and of the uriniferous tubes of the kidney, under the influence of the poison of scarlatina, is probably analogous to this intestinal desquamation in cholera. In both cases, it is probable that a poison in the blood is the immediate cause of the process.

The very peculiar odour of the rice-water stools—so entirely unlike any other odour, that it alone would suffice for the diagnosis of cholera—shows that the stools contain some new material, or that some constituent of the body has undergone a peculiar morbid change.

It is nearly certain that the intestinal discharges contain a morbid poison by means of which the disease may be communicated to others. So that, as Dr. William Budd has suggested (*Association Journal*, 1854), a single case of cholera may, through the sewers, infect a whole district.

The facts and arguments here adduced are sufficient to warrant the inference that a morbid poison in the blood is the essential cause of cholera. The poison excites the gastro-intestinal symptoms, the vomiting and purging; by means of which the poison and its products are eliminated. And, in the worst cases, the same poison excites contraction of the muscular walls of the pulmonary artery, and then the condition of collapse occurs. During an epidemic of cholera, there occur many cases of choleraic diarrhœa which never pass into collapse. It is probable that both classes of cases are of essentially the same character; the same morbid poison is the cause of both; and the transition from choleraic diarrhœa with bilious stools to choleraic collapse with rice-water stools takes place by almost imperceptible gradations in different cases. The transition back again from the state of collapse to that of bilious diarrhœa occurs when the morbid condition of the blood is so far lessened that the circulation through the pulmonary vessels again becomes free. The stage of reaction is then established; and this is sometimes followed by fever, with engorgement of the lungs and a scanty secretion, or even complete suppression, of urine, which is often fatal.—*Brit. Med Journ*, Nov 18, 1865.

(*To be concluded in next number.*)

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The Progress of Cholera.—With the advancing year, cholera is beginning to show signs of greater activity on the Continent. The disease was still prevalent in the southwestern provinces of Russia (in Europe), in some parts of Saxony, upon the Bavarian frontiers, and it had not ceased in Paris, when 1865 came to a close. In the course of December, also cholera appeared in two localities of the Department of the Vosges, Eastern France—namely, in Raon l'Etape and Rambervilliers. Caen and Brest amongst the western departments were attacked the same month. The disease lingered in Paris throughout the greater part of January of the present year; between the 26th December and 24th January it caused 173 deaths in Caen; and it prevailed in Brest through the past and previous month, causing close upon 600 deaths.

At the present moment cholera has not ceased in the suburbs of Brest, and it is spreading in various districts of the Departments of Finisterre, Morbihan, and Côtes du Nord. From Saxony there is no recent news of the disease; but it still exists, and extends slowly, in the southwestern provinces of Russia.

It is thus seen that foci of the pestilence remain in Eastern and Western, and not improbably also in Central Europe. The recent activity of the malady in the western departments of France indicates the probability of its resuming a migratory course as the year rolls on, and the necessity of a careful watch being kept on its progress.

In the more recent extensions of the disease, although it may have shown itself over a wide area, and been as fatal as heretofore, the number of persons attacked has been comparatively small.—*Lancet*, March 3, 1866.

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Health of Paris.—It is asserted in the *Revue de Thérapeutique* of March 1, that the cholera has entirely disappeared from Paris, but that it is replaced by eruptive fevers and variola.

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Cholera at Brest.—The *Ocean*, of Brest, of February 12th, states the deaths from cholera during the five preceding days amounted to 46, including 13 in the hospitals. The epidemic has nearly ceased within the walls of the town, the deaths having diminished from seven to three or four per day, almost all outside the walls.

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President's Address in the Public Health Department of the Social Science Association.—[The following extract from the highly instructive address of Dr. Edwin Lankester, delivered at Sheffield, in October last, possesses unusual interest at the present time, when the advent of the Asiatic pestilence is so generally apprehended,

and it is therefore of such extreme importance that the causes and mode of propagation of contagious diseases should be thoroughly investigated.]

"The Sciences are bound together by indissoluble links. Man separates them through his feebleness and for his convenience; but there is reason to believe that, analyzing all the facts and phenomena of the external world, there is underlying one great force, one primal mover, out of which, with unvarying precision, the great phenomena of the universe proceed Recent researches have shown that heat itself is but a mode of motion; that heat at certain temperatures becomes light. Light, in its turn, as we see in the photographic art, becomes the source of chemical change. Chemical force becomes galvanism; galvanism is converted into magnetism. Motion generates electricity. Galvanism and magnetism produce heat, light, electricity, motion. This demonstration of physical forces is regarded by some philosophers as complete, while others have gone yet a step further. It is but as the heat and light of the sun are poured down upon the earth that plants live. The rays of the sun become more direct, the heat and the light become chemical force in the plant, and now in its secret cells fresh energy is felt, and all the phenomena of plant-life are manifest. The rays are now withdrawn, the heat and life diminish, chemical change ceases, the plant-life grows sluggish. Some plants die, the majority drop their leaves, and our winter is characterized by a dormant vegetation. Here we have a correlation of physical and vital forces; but the correlation does not stop here. During the life of the plant there has been deposited sugar, and starch, and gluten, in its roots, its stem, its leaves and seeds. These are the food of animals. Withdraw this food, and they die. The chemistry of the sun has formed the starch, the sugar, and the gluten. This chemistry is undone in the animal; it becomes heat—animal heat; it becomes motion—muscular force in the muscles, and that most refined of all motions, nerve-force, by which the spiritual consciousness of man becomes cognizant of sensations, accumulates ideas, reasons, and becomes an intelligent, conscious, and responsible being.

"It is here, I think, that we get a glimpse of a real connection of the sciences; of a dependence of one upon the other; and of such a connection between the most recondite and the most practical departments of Social Science, and the most elementary inquiries of the physical philosopher, as clearly demonstrates the claim of this Association to the position of a scientific body, and clearly points out the road it must follow, in order to achieve for man the highest triumphs of his intellect in unravelling the deepest secrets of his existence.

"But now let us inquire what is the position that the Department of Public Health should take amongst the branches of Social Science. At first sight, it is very evident that there is no sharply defined line between our various departments, and that each contemplates facts and principles which are, more or less, common to all. At the same time, our consciousness of health and sickness is one of the most common facts of our existence; and we have no records of communities of men who are not cognizant of disease as opposed to health, and who do not employ some measures, whether efficacious or not, for the prevention of disease. Our Department, then, contemplates the laws of health and disease, with the object of applying that knowledge to the prevention of the latter.

"Herein hygiene differs from medicine—the first prevents, the latter cures. Or, if you like to enlarge the meaning of the term medicine, our department may be otherwise called that of preventive medicine. Our inquiries, then, must be more particularly carried on by the aid of the sciences of physiology, which contemplates the laws of life; and, in so far as physiology is connected with the science of chemistry, and with the various branches of experimental and physical science, we must call them to our aid.

"Our object being the discovery of the causes of disease and death, and the means of so averting and altering these causes as to prevent these calamities, it becomes essential to us that we should classify our facts, so as to present them in a simple and comprehensible form. Now the great factors of our life are air, water, food, and heat. To one or other of the relations of these agents to our life, can we refer all the varied questions with which we have to deal.

"There is no animal existence without air. The humblest monad needs for its existence a supply of oxygen gas. It moves

and lives but as that oxygen produces chemical changes in its interior. The law is universal. Man is but an aggregation of monads. Each busy cell, of which his body is composed, contributes to the aggregate of his life, only as it is acted upon by the oxygen of the air. This fact lies at the foundation of a hundred branches of our inquiry. It is the necessity for this oxygenation of our tissues that gives all the importance to our inquiries into the ventilation of houses and workshops, of cowsheds and stables—in fact, of any place where living breathing beings are inclosed. It is this fact which lies at the foundation of all our anxiety about the overcrowding of our dwelling-houses, factories, and shops. By the aid of this great primal fact, we explain the unnecessary disease and death from scrofula and consumption; and by rendering it more and more a first principle of human action, we hope to save the lives of thousands of our fellow creatures. These inquiries result from the one single fact that man requires oxygen, which he obtains from the air. But the air in which he lives not only supplies him with oxygen, but it is the great repository of all that is exhaled from the earth, and it comes to him and to the lower animals, burdened—alas! too often fatally burdened—with poisons; chemical agents that, swiftly coursing through his blood, work their destructive action on his frame, and either damage the functions of his life or destroy his existence altogether. All the great questions that gather round us of epidemic or endemic, miasmatic and contagious diseases, will find their appropriate place in our inquiries into the nature of impure and poisoned air.

"Water is another factor of organic life. Without water, no chemical change can take place in a living body. A large number of animals have their existence determined by water. Water enters into the composition of all organic beings. A man weighing 154 pounds contains 111 pounds of water in his tissues. The oxygen that vitalizes his tissues is conveyed by water. The starch, the fat, the protein, necessary to the existence of animals, are all digested, absorbed, and conveyed to the tissues by water. These substances, through whose chemical change life is possible, are decomposed in the presence of water, and the products of this decomposition are carried off by the agency of water. All the higher animals drink water for this very purpose, and the adult human being, on an average, in one form or another, drinks from 70 to 80 ounces of water a day. Water is the most potent of chemical agents; its solvent power is equal to that of aqua fortis or oil of vitriol, and it associates itself in nature with a vast variety of compounds with which it comes into contact in the external world. It dissolves both organic and inorganic matters; hence it may become so contaminated as to be unfitted for the purposes of life. From the inorganic world it may take up the salts of lime, iron, lead, and other compounds, in such quantities that when taken into the human body it is not only unfit for healthy life, but it may become the source of immediate disease or death. Like the air, it may become the medium of introducing those definite organic poisons, which, kindling similar poisons in the living system, are at once the source of disease to others and the death of the individual suffering from their action. Hence our inquiries embrace the means of supplying to every individual a sufficient quantity of pure water for his healthy existence.

"But water has other than this fundamental relation to the life of man. Man is a washing, cooking, and manufacturing animal; and wherever water is used in these relations so as to affect his health, the question raised is one that belongs to the department of public health.

"As the animal organism cannot live in air and water, but requires varied compounds of carbon, oxygen, hydrogen, and nitrogen for its existence, the whole question of the relation of the compounds of these elements used as food, becomes the subject of our inquiries. Here our researches are based especially on chemical facts, and we must take for our guides Mülder and Liebig, and the great school of chemical physiologists. The freshest air and the purest water will be no protection from disease and death, unless the human system is supplied in its food with the elements necessary for the play of those chemical forces which result in life. Not only must there be food supplying the materials of combustion and nutrition, but each tissue is built up and constituted in its own peculiar way. The blood must be supplied with chloride of sodium and with iron; the bones with phosphate, carbonate, and fluate of

lime; the muscles with potash; the bile with sulphur; the saliva with cyanogen; the teeth, hair, and nails with silica. A diet deficient in all these materials may be the source of disease. Our navy were formerly decimated for want of fresh vegetables. Our army was starved on an excessive diet of salt beef. Our children die if fed alone on arrowroot and corn-flour. Those who inhale abundance of fresh air, and have access to infinite stores of pure water, nevertheless fall easy victims to diseases which result from the redundance or deficiency of the compounds which in natural quantities constitute the source of their daily life. The inquiry as to what constitutes the best food for man in all the various conditions of his life is one yet in its infancy, and it is perhaps a question as to whether the entire ignorance of a great portion of the community on this point is a greater evil than the arrogance with which pseudo-scientific teachers pretend to instruct the public as to what they should 'eat, drink, and avoid.' In the absence of all consciousness that he knows, man, like the lower animals, is guided by an instinct which is sufficient to preserve and increase his race; but with knowledge comes this danger (which in all cases must be risked), the danger of hasty generalization. In this frail bark, how many of our race have perished before gaining a firm footing on the truths of well established science! This is the reproach which the student must patiently bear from the crowd, whilst he is seeking some higher guide than that which they possess in common with the brutes that perish.

"Nor ought we to forget in our department, as a question of food, the remarkable tendency of man to partake of nervous stimulants. The extent to which substances may be taken with impunity that address the nervous system, is a question that is occupying the attention of some of our most distinguished physiologists; and, whilst at the present moment science cannot be said to have pronounced on the question, there is no doubt of the fact, that one of the most terrible scourges of the human race is the tendency to indulge to excess in drinking alcoholic beverages. The vices of tobacco-smoking, chewing, and snuffing, with opium and hemp eating, exert but little evil as compared with the terrible vice of drunkenness. There are many here who will feel that the interdiction of these beverages is not the sound conclusion of social science; but all must acknowledge, in a scientific point of view, the value of the large body of facts which have been presented us by total abstainers from alcohol, who have thus demonstrated that the consumption of these fermented liquors is not necessary for the maintenance of health or strength.

"Air, water, and food, are necessary to the naked savage. Not in this climate could civilization advance, without provision for the artificial maintenance of heat. At the temperature of 32°, water becomes solid, and is no longer capable of maintaining life. In those regions of the world where the temperature never rises above this, there is no life. At much higher temperatures, only plants and animals of the lowest types and feeblest vital powers exist. It is not till we ascend the animal scale, and arrive at birds and mammalia, that we find animals constructed to maintain their own temperature, and thus become independent of external sources of heat. This animal heat is maintained by the combination of the carbon of the food in contact with oxygen, and animals living in low temperatures maintain their heat by large supplies of food. Their whole existence is absorbed in seeking food, to maintain their heat against the cooling influence of the external atmosphere. Withhold food, and they perish. So with man; unclothed he barely exists; but he clothes himself with skins, and builds himself houses. He economizes his heat, he consumes less food, his skins are changed for cotton, linen, and fibrous fabrics; his huts for houses, mansions, and palaces; and in this relation of his vital functions to that mode of motion we call heat, we see one of the great causes of his civilization. No questions that can come before our department can have a higher or more commanding interest, than this one of heat. Look at the thermometer on your garden wall at this season of the year. Night after night it falls lower, and as it falls degree after degree, the rates of mortality rise. A cold day in winter is the death-knell of thousands. We know this. It is law. Can we not avert this disaster? Must our intelligence be brought up at this point, and man be told that although he has, by clothing, and by warming his dwelling-place, successfully resisted the cold

that must have made him a savage, he can go no farther? I do not believe it. Here is a great question for us to discuss and look into—how we can best save the life which is every year destroyed in our climate by cold.

"But high temperature has its perils, though not perhaps so great as low. Diarrhœa, in the summer of our country, is the representative of the chest-affections of the winter; and, I believe, is more under the control of the application of known laws for its removal, than the latter diseases. We must then study the laws of heat in relation to the life of man, in order to be able so to construct and warm our houses, and arrange our clothing, as to secure immunity from temperatures destructive of health and life.

"I might have prolonged this sketch of the fundamental principles and objects of the Department of Public Health; but I am anxious to dwell a little more at length on some occurrences which, at the present moment, have assumed a gravity that, in point of interest, throws a shade over all other questions. I allude to the presence of cholera on the continent of Europe, and to the extensive prevalence of the Siberian cattle-plague in England. In anticipation of the one plague, and in the actual presence of the other, there is enough to excite the keenest interest of the most apathetic, and to induce the most anxious inquiries as to the causes of these diseases, and the best means of arresting their progress."

(*To be continued.*)

CLINICS.

HOSPITAL NOTES AND GLEANINGS.

Iodoform; Its Use in some Cases of Cancer of the Uterus.—During a recent visit to the obstetric wards of St. Bartholomew's Hospital, we observed some patients affected with epithelioma of the cervix uteri who were being treated with iodoform. Dr. Greenhalgh informed us that he owed the suggestion of this remedy to Dr. Eastlake, and that he had already employed it in about forty cases. Uncertain as to the strength of this remedy, he had commenced its administration in doses of a quarter-grain; but he had found that a much larger quantity could be certainly taken with impunity, and, he thought, with advantage. Latterly he had been giving from three to five grains, made up with bread in a pill, two or three times daily. The cases most suitable for its employment are those where pain is a prominent symptom, and where there is a deposit. In cancer he had reason to think that not only was the pain much mitigated by its use, but the progress of the disease was actually checked. In a case of rheumatic gout, with large deposits about the knuckles, its effects had been very marked. Pain had been subdued, and the deposits in the joints had gradually disappeared. Iodoform, we learn, is also useful as a deodorant. In cancer of the cervix, where there is a very fetid discharge, it is employed with advantage as a pessary in the proportion of one grain to a scruple of cocoa butter. A larger quantity than this is apt to be irritating; but used in this strength, the material has a remarkable effect in conquering the terrible fetor which is so distressing in this disease. Iodoform is unhappily not a pleasant substance. It possesses a powerful odour of peculiar kind, which some one described by the term "concentrated seaside." Notwithstanding this disadvantage, the patients did not complain of any unpleasant effects. In only one case did it produce sickness, and that speedily subsided. Iodoform was discovered, Dr. Eastlake tells us, by Serullus in 1824, and is produced by the action of iodine and alkalies or alkaline carbonates on wood spirits, alcohol, or ether. It will be seen that Mr. Nunn's experience of its internal use in cancer is not so favourable as that of Dr. Greenhalgh. It is evident, indeed, that we require a very much more extensive trial of the drug before we shall be entitled to form any strong opinion as to its merits. But the facts already noted are at least interesting, and suggest further observation.—*Lancet*, Feb. 24, 1866.

Iodoform; Its Use in some Cases of Cancer, Syphilis, and Neuralgia.—At the suggestion of Dr. Eastlake and Dr. Greenhalgh, Mr. NUNN has administered iodoform in a series of cases in Middlesex Hospital, as a sedative in cancer. In the majority of cases, the patients had become accustomed to the use of morphia; in estimating, therefore, the advantage of the drug, that fact has to be borne in mind. Mr. Nunn states his belief to be that, as a sedative, when given internally, iodoform is very uncertain, if not powerless; applied externally it

alleviates pain. He has found, however, in obstinate syphilitic ulcerations, reason to hope that iodoform may prove a valuable remedy. The usual dose was one grain in a pill; in one or two cases five grains were given, without better result as regards relief of pain, and with the disadvantage of producing nausea and sickness.—*Ibid.*

MEDICAL NEWS.

DOMESTIC INTELLIGENCE.

University of Pennsylvania—Auxiliary Faculty of Medicine.—We invite attention to the following announcement, from which it will be seen that the course of instruction will commence on the first Monday of the present month: Harrison Allen, M. D., Professor of Zoology and Comparative Anatomy.

Horatio C. Wood, Jr., M. D., Professor of Botany.

F. V. Hayden, M. D., Professor of Mineralogy and Geology.

Henry Hartshorne, M. D., Professor of Hygiene.

John J. Reese, M. D., Professor of Medical Jurisprudence, including Toxicology.

The branches of Natural History forming the subjects of the three Professorships first named will be taught mainly in reference to their medical relations.

All students who have matriculated in the Medical Department, and have taken the tickets of two of the Medical Faculty, have the right of admission to the lectures. Attendance upon these lectures is not compulsory upon the students in the Medical Department.

The several courses will consist of at least thirty-four lectures, to be delivered, at hours fixed by the Faculty, three times a week during the months of April, May, and June, commencing on the first Monday in April, and ending on the last Saturday in June.

A Diploma from the University will be granted to those medical graduates, who, after attendance on a course of the lectures, shall undergo a satisfactory examination by the Faculty.

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Jefferson Medical College; Summer Course of Lectures.—This school has instituted a summer course of lectures, which it is announced will begin on Monday, April 2, 1866, and continue, with a recess in July and August, until the 6th of October.

The Clinical department of the Course will be illustrated at the College, the Wills Hospital, and the Philadelphia Hospital, by the members of the Faculty during their terms of Service at these Institutions.

The Courses will be of an entirely practical character, embracing important specialties in Medicine and Surgery, with extensive Clinical Illustrations.

The Lectureships are constituted as follows:—

Clinical Surgery, Profs. Gross and Pancoast.

Clinical Obstetrics, Prof. Wallace.

Pathology, Prof. Dickson.

Hygiene and Meteorology, Prof. Rand.

Materia Medica and Therapeutics, Prof. Biddle.

Clinical Medicine, Dr. DaCosta.

Visceral and Surgical Anatomy, Dr. W. H. Pancoast.

Operative and Minor Surgery, Dr. S. W. Gross.

Physiology, Dr. J. Aitken Meigs.

Ophthalmic Surgery, Dr. R. J. Levis.

Venereal Diseases, Dr. F. F. Maury.

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Medical Instruction in Philadelphia during the Summer.—The most ample opportunities are afforded in Philadelphia, to medical students for obtaining instruction during the summer season. In addition to the courses given in the University of Pennsylvania and Jefferson Medical College, a number of private schools are engaged in teaching.

"The Summer School of Medicine," commenced its second term March 1st, 1866; in which instruction is given in Anatomy, Surgery, Chemistry, Physiology, Obstetrics, Materia Medica, and Practice of Medicine, by Drs. Boling, Hutchinson, Hodge, Smith, Cheston, and Williams.

The subjects are studied by the aid of specimens, manikins, demonstrations, and clinical examinations of patients.

Students are given access to the Pennsylvania, Episcopal, and Children's Hospitals. The employment of the microscope, and the microscopic appearance of the tissues and fluids in health and disease, with the chemical tests and reactions, will also be taught.

Dr H. Lenox Hodge will give a course of lectures on Surgical Diagnosis.

The history, causes, symptoms, and pathology of surgical diseases and injuries will be carefully studied, and the means of recognizing and healing such disorders distinctly taught.

Instruction will be given in the use of the microscope, ophthalmoscope, otoscope, laryngoscope, endoscope, and other specula; in percussion and auscultation, and other means now employed for physical examination.

Various other associations of medical men are engaged in medical teaching, which we regret not being able to particularly notice, as their announcements have not been sent us.

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University of Pennsylvania.—The class attending the medical lectures during the session 1865-6 was 520, and at the annual commencement held on the 14th of March, 1866, the degree of M. D. was conferred on 165 candidates.

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Jefferson Medical College, Philadelphia.—At the annual commencement, held on the 10th of March, the degree of M. D. was conferred on 165 candidates.

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Massachusetts Medical College; Harvard University.—At the annual commencement, held on the 7th of March, the degree of M. D. was conferred on 69 candidates.

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Medical Department of Columbia College—College of Physicians and Surgeons, New York.—At the 59th annual commencement held on the 9th of March, the degree of M. D. was conferred on 112 candidates.

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Medical Department of the University of the City of New York.—At the annual commencement held on the 2d of March, the degree of M. D. was conferred on 78 candidates.

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Bellevue Hospital Medical College.—At the fifth annual commencement, held on the 24th of February, the degree of M. D. was conferred on 172 graduates.

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Yale College.—At the commencement in January last, the degree of M. D. was conferred on 12 candidates.

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Rush Medical College.—The number of students during the session of 1865-6 was 293, and at the commencement on the 1st of January, the degree of M. D. was conferred on 90 candidates.

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Chicago Medical College.—At the commencement on the 1st of March, the degree of M. D. was conferred on 22 candidates.

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University of Buffalo.—At the annual commencement of the Medical Department of this University, held on the 20th of Feb., the degree of M. D. was conferred on forty candidates.

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American Medical Association.—The seventeenth annual meeting of this Association will be held in the city of Baltimore, Md., on Tuesday, May 1, 1866.

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Mutter Lectureship.—The second course of lectures will be delivered by Dr. J. H. Packard, commencing on Tuesday evening, April 3d, and continued on every Tuesday and Friday evenings until completed. The subject will be fractures of the bones of the upper extremity, and the course will consist of ten lectures.

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Medical Department of Soule University, Chappell Hill, Texas.—We find in *The Southern Intelligencer*, a paper published in the city of Austin, Texas (Feb. 15, 1866), the announcement of the first course of Lectures in this School.

The faculty consists of:—

J. Boring, M. D., President; N. N. Allen, M. D., Prof. Surgery; Robert Flucellen, M.D., Prof. Anatomy; W. H. Gantt, M. D., Prof. Physiol. and Path. Anat.; John L. Watkins, M. D., Prof. Theor. and Pract. Med.; J. Boring, M. D., Prof. Obstet. and Dis. Women and Children; John H. Webb, M. D., Prof. Mat. Med. and Therap.; W. B. Trainham, M. D., Prof. Chemistry and Med. Jurisp.

The course is announced to commence on the first Monday in Nov. last, and continue until the last Wednesday in April.

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Boylston Prizes.—The Boylston Medical Society of Harvard University have awarded the first prize of forty dollars for an essay on "Reflex Paralysis" to Dr. Jas. F. A. Adams; and the second prize of twenty dollars for an essay on "Epidemic Cholera," to Dr. Chas. P. Kemp.

New Medical Journals.—In our preceding number we noticed ten new medical journals, and we have now to add three more to that list. The first is *The Medical Reporter*, a neatly printed octavo of 24 pages, issued on the 1st of March, at St. Louis, Mo., under the editorship of Dr. J. S. B. Alleyne and O. F. Potter. It is to be published semi-monthly, at three dollars per annum *in advance*. The second is *The Southern Journal of the Medical Sciences*, the initial number of which is to be issued on the 1st of May. It is to appear quarterly, each number to contain 200 pages; the subscription is eight dollars a year; and is to be edited by Drs. E. D. Fenner, D Warren Brickel, and C. Beard. The third is the *New York Lancet*, a *family* medical journal, published bi-monthly at two dollars a year.

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Obituary Record.—Died, at Augusta, Me., of softening of the brain, aged 50, William B. Herrick, M. D., formerly one of the Professors in Rush Medical College.

—— At Troy, N. Y., Jan. 7, 1866, aged 71 years, Thomas W. Blatchford, M. D Dr. B. was a gentleman of highly cultivated mind, zealous for the advancement of our science, and highly respected for his moral worth as well as for his skill as a practitioner.

FOREIGN INTELLIGENCE.

Kerosolene as a Local Anæsthetic.—A few days ago, Sir James Y. Simpson operated in the Edinburgh Infirmary on a case of vesico-vaginal fistula: and for the purpose of producing local anæsthesia he applied, before making the incisions and stitches, the vapour of kerosolene by a spray douche. Afterwards, he applied the spray of kerosolene to the hands, arms, etc., of several students, and showed, that, by its influence, the douched part could be frozen in a very few seconds. To obtain the full effect of the kerosolene—which is one of the cheapest of medicinal agents—it requires to be pure. In various minor operative procedures Sir J. Y. Simpson has used local anæsthesia of late with varying amounts of success, employing vapour of sulphuric ether according to Dr. Richardson's ingenious method. He believes that a larger apparatus, provided with several jets, like a watering pan, would be sufficient as an anæsthetic in many smaller operations. As local anæsthetics he has employed the vapour of oxide of amyl (eupion), nitrous ether, the lighter hydrocarburets from the distillation of paraffine oil, chlorocarbon, hydrochloric ether, etc. Some years ago (see *Medical Times and Gazette* for January 22, 1859, page 79) he suggested, in our columns, solid carbonic acid for producing the same effect, observing that it had always seemed to him that solid carbonic acid, applied in a caoutchouc bag or otherwise, alone or mixed with ether, would probably be found the most convenient and best freezing agent for producing local anæsthesia in the practice alike of the surgeon, dentist, and accoucheur.—*Med. Times & Gaz.*, Mar. 3, 1866.

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Scientific Report on the Trichina.—The Prussian Government had intrusted investigations on the nature and mode of propagation of the trichina to Professor Kühne, of Halle, and zealously were they pursued from 1863 to 1865. The report has been sent in, and states, among other things, the following particulars: Pigs affected with trichinæ do not present symptoms sufficiently obvious to be recognized by breeders It was therefore incumbent on the reporter to elucidate facts connected with diagnosis. Animals were for that purpose fed with meat full of trichinæ, and daily watched by veterinarians. The latter could hardly detect any change in the health of the animals, nor did slight indispositions present anything which could be construed into a pathognomonic symptom of the disease, yet it was proved by post-mortem examination that trichinæ had formed in large masses in the muscles of the animals. Hence the breeder cannot be expected to recognize the existence of the malady, nor should he be punished for having sold diseased meat. No difference of race, sex, or age creates a greater or less aptitude to be invaded by the trichinæ. It is not true, as has been asserted, that trichinian disease is produced by feeding pigs with beetroot, by the ingestion of earthworms, or of moles containing trichinæ. The investigators have found that the parasites of the beetroot and the moles are not identical with the trichinæ which infest the pig. Not so, however, with rats and mice, which are sometimes devoured by pigs Cats also may be thus contaminated; the latter are especially sus-

ceptible. It is therefore important to prevent pigs from eating dead animals. It is very likely that foxes and weasels may be very dangerous in this respect, but it is plain that pigs can but seldom feed upon them. Dogs are also very liable to breed trichinæ, but birds are quite insusceptible. Trichinæ, which have passed into the stomach of pigs with their food, are therein completely destroyed; hence it may be inferred that the fecal matter of diseased animals is not noxious. The culinary precautions to be held in view when cooking pork are the following: The process of boiling or roasting should be carried on with the greatest care. People should not partake of any meat that has not been sufficiently cooked, and avoid such roast pork the centre of which still presents traces of blood. By salting and smoking hams for about ten days, the trichinæ are quite destroyed.—*Lancet*, Feb. 10, 1866.

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Trichina Disease; Butchers' Microscopical Society.—The trichina question is taking on a practical aspect in Germany in the shape of the formation of microscopical societies by pork-butchers. That at Nordhausen, in Prussian Saxony, has just published its rules, stating in the preamble, that, as the microscopical examination of the flesh destined for sale is the only security for the public and the trade, and that as where this has to be paid for it will be apt to be neglected, it has been resolved to form a society which Professor Kutzing has agreed to instruct in the art of using the microscope and detecting the trichinæ in their various forms. Those persons who are desirous of being members of the Society must be in possession of a sufficiently good microscope, and have learned the use of it for the detection of the trichinæ. The microscope must be always kept in a good condition, and at least three portions of the muscles of each pig must be submitted to examination immediately after slaughtering. The preparations must be kept carefully between glasses for mutual examination and control, under the superintendence of Dr. Kutzing. When the microscopes and preparations are not found to be kept in proper order reproof will be administered, which, if not efficacious, will be followed by expulsion from the Society. The Society, moreover, offers to pay, for every pig containing trichinæ delivered up to it, not only more than the market price of the animal, but a premium of fifty thalers. This is, at all events, a good practical attempt at meeting what has become in Germany a great public calamity.—*Med. Times & Gaz.*, March 3, 1866.

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Syphilization in London.—At the Medical Society of London, Mr. James Lane read a summary of the history of cases of syphilis which have, under Professor Boeck's own superintendence, been subjected to syphilization at the Lock Hospital during the last few months. A crowded meeting assembled on the occasion to meet Professor Boeck, who was also present. Mr Lane's paper went to show that the remedy was still on its trial, so far as these experiments are concerned. Mr. Lane, in fact, stated that he was not at present able to offer any definite opinion as to the value of the process as a means of cure. From the nature of the case, it necessarily happens that a long period of time, as well as many experiments, are required in order to obtain a fair view of the results. All that he would say at present was this, that, if he had nothing to adduce positive favourable to syphilization, he had nothing unfavourable to say of it. He had brought the cases forward in their present unfinished form, in order that the Society might have an opportunity of meeting Professor Boeck, who is on the point of leaving England. Mr. Lane paid a high compliment to Professor Boeck, and bore witness to his candour and high scientific attainments. At a future time he will produce his experience of the treatment in a more full and complete form. He said that the marks left by the process were really in most cases very insignificant—not so bad, indeed, as are those often produced by syphilitic rupia. Nor was any objection found on the part of the patients operated on (and they were almost all females) to submit to the treatment.

Much exaggeration exists in the minds of the profession on these points. The treatment had in no one of the twenty-three cases produced any unpleasant consequences; but all the patients had improved in health under it; and, in those few whose case was approaching a termination, the symptoms of the disease were disappearing.

This much, therefore, appears to be proved of syphilization in Mr. James Lane's hands: that there is, *per se*, no *à priori*

objection to its use. The main point which remains to be decided is the effect of the treatment over the disease; and this, of course, time only can decide. If, as Professor Boeck asserts, the relapses are considerably fewer than after mercurial treatment, and at the same time only of a very mild and passing character; and if the disease may be said to be virtually eradicated from the body by syphilization, the remedy must be admitted to be most valuable, and, in fact, far superior to mercury or any remedy yet known. It is admitted that, under the influence of mercury, the symptoms of secondary syphilis disappear more rapidly than under syphilization; but then what is also admitted is, that relapses frequently occur, and that the severity of the symptoms of the disease increases with each succeeding relapse. The rapid mercurial cure may be, therefore, a deceptive cure.

Professor Boeck, again, lays stress on a fact, the importance of which has only of late years been dawning upon us; and that is, the fatal character of the internal diseases produced by syphilis—of the liver, kidney, brain, etc.; and it is, he asserts, in warding off those diseases, that syphilization is of such value. The objections taken to syphilization by Mr. De Méric were of a feeble character, and merely a re-echo of what has been so often said in Paris—viz., that it was immoral. Mr. De Méric also contradicted himself. He accused his compatriots of Paris of narrow-mindedness in refusing M. Auzias-Turenne an opportunity of practising syphilization in the French hospitals, and at the same time complimented England for its liberality in letting the thing be tried at the Lock Hospital. But if the proceeding be, as he asserts it is, of an immoral character, his blame of his own countrymen is wrong, and his praise of his English *confrères* very equivocal. His argument against syphilization as a cure for syphilis really amounted to nothing; viz., that he did not understand how such a remedy can produce the effects asserted of it. He forgot, as Mr. Lane told him, that, if his argument were worth anything, it would apply to nearly every dose of physic we give. Assuredly, only one thing can settle such a question, and that is experience. Those, therefore, who argue of its use from an *à priori* idea of syphilization, build their arguments on a quicksand They might just as well argue about the probable effects of a dose of Epsom salts from a consideration of their chemical character, or deny the virtue of quinia in ague because they do not know how it acts. And, in this respect it is only fair to say, that Professor Boeck has now had thirteen years' experience of the remedy; that his convictions are derived from the results of operations performed on a very large scale; that he is confirmed in the belief of the excellence of syphilization by what he has seen; that he is admittedly a man of large scientific attainments, and a most honest and careful observer; that what he says, therefore, is fully entitled to consideration; that his opponents have not facts, but opinions only, to set off against his statements; and that only fact and experiment can decide the matter. Besides this, it is no slight testimony in favour of his opinion, that such men as Dr. Bidenkap should have an equally firm belief in the remedy—belief founded on experiment Opposition, therefore, like that of Mr. De Méric, must be regarded as mere play of words. As to the suggestion of immorality in the proceeding, we can only say that we are surprised to hear it uttered in a learned medical society. Would Mr. De Méric refuse to give mercury to a case of secondary syphilis, if he knew it to be a perfect remedy for the disease, and that it would prevent the patient ever afterwards suffering from syphilis? Would he, on moral grounds, abstain from the use of so perfect a remedy? Surely not. And yet this is precisely what his argument comes to in the case of syphilization.

Mr. James Lane and Mr Gascoyen have determined to continue the experiments after the departure of Professor Boeck; and we may, therefore, anticipate that in due time, and not at a very distant date, the profession will have the results of their very carefully conducted experiments laid before them in a complete form.—*Brit. Med. Journ.*, Dec. 23, 1865.

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Stomatoscope.—A new instrument, to be termed the *stomatoscope*, was exhibited last week to the Paris Surgical Society by its inventor, Professor Bruns, of Breslau. A platinum spiral wire (inclosed in a box-wood cup, to prevent the transmission of heat), brought to a red heat by the passage of an electric current from two of Middeldorp's elements, is placed in the mouth behind the teeth. The light reflected by a

very small mirror is sufficiently intense to render the jaw transparent, so as to allow of the vessels proceeding to the roots of the teeth, the smallest specks of caries, etc. etc., becoming visible. By reason of the transparency, even the labial coronary artery may in some subjects be seen at the level of the commissure, and its course followed. The instrument is therefore likely to form a useful means of exploration in dental affections.—*Med. Times & Gaz.*, Feb. 3, 1866.

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Mortality in Paris Maternity Hospitals.—Dr. Tarnier, in a pamphlet on the *Hygiene of Maternity Hospitals*, gives us details of the fearful mortality of puerperal women in Paris hospitals. In the days of Tenon, when these women were massed together, two, three, and even four in the same bed, in narrow hospital wards, the mortality was 1 in 15. At the present day, in our spacious and well ventilated wards, each patient having her own bed, the mortality is still as great. The statistics of M. Husson show that in 1861 the mortality in hospital of puerperal women was 1 in 10, whilst the mortality of those attended at their own houses was only 1 in 194! The women delivered at home are, for the most part, lodged in dirty, small, ill-ventilated, and badly lighted rooms; they have little or no linen or fire, and are badly nursed; and yet they recover. In 1862 the mortality was 1 in 14 in hospital, and 1 in 164 outside. If, therefore, the mortality had been no greater inside than outside the hospitals, the deaths would have been 80 instead of 1,169, who actually died in hospitals during those two years. It appears, in fact, that 545 puerperal women are thus somehow or other actually destroyed by residence in hospital. M. Tarnier may well call this a national calamity. The cure of this frightful state of things is to be found, he says, in a complete separation, in single bedded rooms, of the women during the first ten days after delivery.—*Brit. Med. Journ.*, Jan. 6, 1866.

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Smallpox in Paris.—Smallpox is raging in the Quartier of Paris near Vincennes. The hospitals of La Pitié and of Vincennes are crowded by its victims. In consequence, orders have been issued to officers in command to have the men of the regiments quartered in that part of the city revaccinated. A heifer infected with cowpox was accordingly sent to the barracks of the Cent Gardes, and all the men as well as the officers of the corps were duly vaccinated from the sick animal.—*Lancet*, March 3, 1866.

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Astley Cooper Prize.—The ninth triennial Prize of three hundred pounds under the will of the late Sir Astley P. Cooper, Bart., will be awarded to the author of the best essay or treatise on the disease known as "Pyæmia." Candidates must send their essays to Guy's Hospital on or before Jan. 1st, 1868, addressed to the Physicians and Surgeons of Guy's Hospital. The prize is open to the whole world. We trust that some one of the hospital surgeons of this country, who have had ample opportunities of studying this disease, may be the successful competitor for this prize.

—

Middlesex Hospital.—This institution has recently received from an anonymous friend the munificent donation of one hundred thousand dollars.

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New Gigantic Fossil Animal.—The fossil remains of an animal, stated in the papers to be those of a bird, which must have been 25 feet high, have been discovered in some limestone beds at Nelson, New Zealand. The remains are in all probability those of a saurian.

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Street Accidents in London.—Upwards of three hundred persons are said to be annually killed by vehicles in the streets of London.

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Naples.—It is stated (*Lancet*, Jan. 20, 1866) that there are about 4,000 students in Naples.

A new clinical hospital with 350 beds has been established in that city.

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Obituary Record.—Died, March 5th, 1866, aged 71, John Conolly, M. D., formerly resident physician to the Hanwell Asylum, and whose labours in ameliorating the treatment of the insane largely contributed to the banishment of restraintive means, and to the establishment of the present humane methods of treatment. His memory will be held in respect as long as human sympathies for the unfortunate endure.

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At the present time we have no English writer perhaps, on the Diseases of Women and Children more favorably regarded than the author of the volume before us It has already received the full favor and approbation of the profession. We observe that it has been translated into the German, French, Danish, Dutch, and Russian languages, showing the general regard and appreciation of the book by the profession everywhere. We will, therefore, at this time, content ourselves by simply repeating our former commendation; expressing our belief that it is for the general practitioner one of the best works in print.—*Cincinnati Lancet,* March, 1866.

The author had unusual opportunities for observation in relation to the diseases of infancy and childhood, and seems to have possessed all the requisite qualifications for improving his opportunities to good advantage. Hence, we have, in the present edition of his work, one of the very best treatises on those diseases accessible to the student and practitioner. It is worthy of a place in every physician's library.—*Chicago Medical Examiner,* February, 1866.

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This work is well known to all who have taken any interest in the study of this abstruse and important subject. As an authority in medico-legal medicine, Dr. Winslow has long occupied a deservedly distinguished position. It is rare to find any one capable, not only of logically discussing questions proverbially obscured by the subtlety of the jurist and the casuistry of the metaphysician, but of bringing to such a discussion the pleasing graces of rhetoric and the chaster ornaments of polite literature.—*Richmond Medical Journal,* February, 1866.

Indeed, we have rarely read a medical work of so fascinating a character in the material presented; every chapter being most copiously and piquantly seasoned with anecdote, sketches, and personal notes. Forbes Winslow is authority on his specialty, and his book will be sought for as a work of reference, and as indicated its style and matter will render it a most acceptable and reliable companion to the medical student everywhere.—*Cincinnati Lancet,* March, 1866.

Philadelphia, HENRY C. LEA.

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CHOLERA.

Notes on the Pathology and Treatment of Cholera. By GEORGE JOHNSON, M. D., F. R. C. P., Professor of Medicine in King's College. (Continued from p. 53.)

The General Principles of Treatment.—The account which I have now given of the pathology of cholera, although brief, will, I trust, have been sufficient to convey to those who have carefully read these papers a definite idea of the doctrine which I advocate. If there are any who desire to have further details, and proofs, and illustrations, these may be found in a book which was published ten years ago, but which has hitherto attracted singularly little notice.

I proceed now to the inquiry, What has this pathology to do with treatment? And I maintain that it is a compass which will guide the intelligent practitioner over a "sea of troubles" and perplexities in the treatment of cholera. We now have a definite view of the nature of cholera, of the relation which the symptoms bear to each other, and of the manner in which the disease tends to a spontaneous recovery. We can see that, amongst a vast number of plans of treatment, some have been unquestionably beneficial by assisting the curative efforts of Nature, while others have been as unquestionably detrimental by opposing those efforts. Others, again, have been of a mixed character; as, for instance, the combination of calomel—a purgative—with opium. And, lastly, some methods have been simply neutral in their effects, except in so far as the knowledge that something was being done for him may have inspired the patient with hope and confidence. As an illustration of this, I may mention one of the many infallible cures which have found their way into the *Times*. I mean the inoculation with quassia. If that which has been satirically said contained the whole truth—namely, that "the

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chief art of the physician is to amuse the patient while Nature performs the cure"—the inoculation with quassia would be as effectual as any other method of treatment, and it would have the great negative merit of doing no harm.

There is no remedy which has the slightest pretension to be considered a cure for cholera; no drug or agent which, so far as we know, will neutralize the poison or lessen its virulence. I have not the faintest hope or expectation that a specific remedy for such a disease as cholera will ever be discovered. The number of really specific remedies which we possess for any diseases is unfortunately very small. Those who believe in specifics are, in general, ignorant of the nature of disease and of the true methods of cure; and this ignorance renders them quite incompetent to estimate the influence of treatment.

If I have correctly interpreted the phenomena of cholera, the natural method of cure is eliminative. The process of elimination takes place by two successive stages. 1. There is excretion from the blood into the stomach and bowels; and 2. The morbid contents of these viscera are ejected by vomiting and purging.[1] Can we do anything to assist this natural curative process? Unquestionably we can; by emetics and purgatives. But is it necessary or beneficial to interfere in any way? Ought we not rather to leave the cure entirely to Nature? I have no doubt that much may be done with advantage. And my conviction of this is based partly upon theoretical grounds, and partly upon the actual results of treatment. If we carefully observe the condition of a patient in collapse, we shall often find that the intestines are more or less distended with fluid; and this, too, while perhaps there is general torpor and very little effort at expulsion. Again, it is often found that, although there has been copious watery purging during life, the small intestines contain after death a large amount of a peculiar viscid dirty white material, having a very offensive odour. A purgative may be useful in removing both these conditions; namely, over-distension of the bowel by liquid, and accumulation of offensive viscid semi-solid secretions. The object of a purgative in cholera is not to increase excretion from the blood into the stomach and bowels; but simply to assist in the expulsion of the morbid secretions from the digestive canal. To fulfil this indication, that purgative is best adapted which acts most speedily, yet with the least amount of irritation. I believe that castor oil best accomplishes this object; but a great variety of purgatives have been given with more or less success.

When, in September, 1854, I first publicly stated that I was giving castor oil as a purgative in cholera, the announcement was received with a howl of execration. Give a purgative to a patient whose blood has already been drained of all its liquid and thus rendered too thick to circulate! Unheard of atrocity! Statistics must immediately be published to show that this plan is most deadly in its effects.[2] But at the same time statistics were showing that calomel in frequent and sometimes in large doses is a very successful remedy. How does the calomel act? Is it not an irritant and a violent purgative? Or what is there to deprive it of its purgative properties when given for the cure of cholera?

Calomel a purgative! exclaims indignant orthodoxy. No! calomel is an alterative. It acts upon the liver, and restores the secretion of bile. Those who give this explanation of the action of mercury in cholera, are of course quite unaware what is the real cause of the suspended secretion of bile during collapse, and are therefore equally ignorant of the conditions essential for the restoration of that secretion. To call calomel an alterative and a restorer of the biliary secretion does not, like its com-

[1] If there are any who doubt the elimination of a *morbid poison* by the stomach and bowels, no one can doubt the existence of offensive *morbid secretions* which require to be cast out.

[2] It was evidently the opinion of some who chanced to be in prominent positions at that time, that my alarming outbreak of heterodoxy must be treated, like cholera, by very active repressive measures. So fierce an onslaught was made upon me, that I began to fear lest what Sydenham said of smallpox two hundred years ago, would be found equally applicable to cholera in the present century, "I venture to assert," said Sydenham, "that the physician who has much to do with smallpox runs many risks with his reputation. The vulgar are ever in the habit of ascribing deaths to the officiousness of the attendant; whilst physicians themselves catch greedily at opportunities for slander. They make out their case before incompetent judges, and procure most uncharitable verdicts. They act thus in order that they may build up a name for themselves upon the ruined reputation of others; a proceeding disgraceful to even honest artisans—doubly disgraceful to scholars." (The *Works of Sydenham*, translated by Dr. R. G. Latham for the Sydenham Society, vol. i. p. 137.)

bination with opium, deprive it of its purgative properties. I therefore claim the reported success of the calomel treatment as evidence in favour of elimination.

Saline Treatment.—Another plan of treatment which has unquestionably been attended with a large amount of success is that which is known as the saline treatment of Dr. Stevens. The theory upon which this treatment is based—namely, that the essential cause of cholera is a deficiency of the saline constituents of the blood—has been shown by accurate chemical analysis to be fanciful and erroneous; but this happens to be one of those rare cases in which a theory may be wrong and the practice based on it not far from right. I have condensed from Dr. Stevens' work (*Observations on the Nature and the Treatment of Asiatic Cholera*) the following account of his theory and his practice.

"The first efforts towards a cure should be directed to assist nature in throwing off the poison from the blood, *per vias naturales*, and, at the same time, supplying the necessary saline stimuli, on which the action of the heart and its vessels depends. In accordance with this view, patients presenting merely the first stage of premonitory symptoms, diarrhœa and vomiting, took, on their admission, a Seidlitz powder: and, if sinking was felt but without bowel complaint, more active purgatives were then employed; or three or four teaspoonfuls of Epsom salts were added to the Seidlitz powder. On the bowels being moved, plenty of thin beef-tea, well seasoned with salt, was given. This simple treatment was so successful, that a great many patients had no further complaint, and were generally dismissed cured in a few days.

"If cramps, coldness, or sinking of the pulse, were present, the patients were considered as cholera patients in the second stage. The 'non-purgative' salts were administered every half hour, or more or less frequently, according to the symptoms, and in the following dose: Muriate of soda ℥j; carbonate of soda ℥ss; chlorate of potash gr. vij. When life seemed rapidly ebbing, the collapse stage having been reached, a strong solution of the same salts, at a temperature of 100°, was thrown into the bowel. The saline mixture was administered half hourly; and, in severe cases, the muriate of soda was increased to a drachm, or even more, as circumstances seemed to require. In some cases, an enema composed of a large tablespoonful of common salt in water, at as high a temperature as the patient could bear, was administered every two or three hours."

This plan of treatment has been attended with a large amount of success in the hands of many different practitioners; but, for a very obvious reason, it has not been generally adopted. Its mode of action is essentially eliminative; and, therefore, it is incompatible with that theory of collapse through loss of water which has taken such firm hold of the European medical mind.

This theory of collapse, which now, we trust, has received its death-blow, started into life when cholera first visited Europe in 1832. Before that time, our countrymen in India could not only *give* purgatives as a part of the regular treatment of cholera, but they might also *call* them purgatives without subjecting themselves to the imputation of culpable rashness and folly. Abundant illustrations of the use of purgatives in the treatment of cholera may be found in the writings of the following Indian practitioners: Bell, Orton, Scot, Curtis, Twining, Christie, Rogers, Kennedy, Searle, and Corbyn. None of these writers had any very definite pathological theory. They looked upon cholera as a disease chiefly of the nervous system. They called it spasmodic cholera; and they often gave opium to relieve cramps at the same time that they gave very active purgatives to remove the morbid secretions from the bowels. The fact that, in many instances, their treatment was a mixed treatment—a combination of opiates with purgatives—renders their writings the more instructive, since it clearly appears, on a careful study of their cases, that, in proportion as either the opiate or the purgative plan prevailed, was the mortality increased or diminished.

Several of these authors speak highly of the use of castor oil, on account of its unirritating properties, and the completeness with which it brings away the viscid and putrid secretions from the bowels.

The very interesting paper by Mr. Watkins (*British Medical Journal*, Oct. 28, p. 445), to which I have before referred, contains a most instructive illustration of the effect of various modes of treatment. It will be seen that four distinct sets of cases are there described. In one set opium was

given alone; these were all fatal. In a second set, the opium was combined with calomel or with gray powder; of these more than half died. The purgative action of the mercury somewhat lessened the mortal effects of the opium. In a third set of five, calomel alone was given; and of these one died, while four recovered. In a fourth set of twenty-one, castor oil was given; and nineteen of these patients recovered. Besides these, one case which had been treated by gray powder and opium passed into collapse, and then, castor oil being substituted for the other remedies, she ultimately recovered. Lastly, one most interesting case in full collapse was treated by castor oil until he rallied; then, through some mistake, two pills, probably of calomel and opium, were given, he fell again into collapse; he was a second time treated by castor oil and ultimately recovered.

It is sometimes argued, that no remedies can possibly be of use during collapse because absorption is suspended. Now, in the first place, Magendie has shown that absorption is not absolutely suspended during collapse, though it is rendered much less active. He injected camphor into the rectum, and detected its odour in the breath in five minutes, whereas in health, he says, it may be detected in one minute. He performed the same experiment with ether, and with a similar result. He reasonably infers that absorption is slowly carried on during collapse. (*Leçons sur le Cholera Morbus*, p. 97.) There is undoubted evidence that opium and alcohol become absorbed, and produce narcotic effects during collapse. But the remedies which are of real use during collapse have no need to be absorbed. Surely a mustard or salt and water emetic need not be absorbed in order to excite the stomach to expel its contents. And it can scarcely be doubted that calomel and castor oil, by their stimulant action on the inner surface of the bowel, may excite muscular contraction, and so act as purgatives without being taken up by the blood-vessels.

A writer on cholera during the last epidemic stated that "brandy, ether, and ammonia, turpentine, and even champagne, were given to rouse the flagging energies of life, but to little purpose; they were generally thrown from the stomach as soon as swallowed, and draughts containing creasote, chloroform, and camphor, shared the same fate. The stomach had, as it were, lost the power of ministering to the wants of the system."

Now, it may be asked, whether the stomach was not much wiser and more useful than the doctor, and whether it could better "minister to the wants of the system," than by the expulsion of its morbid secretions, together with such a horrible mixture of drugs as could not be retained and absorbed without adding to the perilous oppression of the vital powers.

During the last epidemic, I observed very carefully the effect of *brandy* in the few cases in which I ventured, in a tentative manner, to give it to patients who were in collapse. I found that it speedily increased the restlessness and feeling of oppression; at the same time the pulse lost power and volume, and the temperature fell. I infer, therefore, that brandy and all alcoholic stimulants during the collapse stage of cholera add to the obstruction of the pulmonary circulation, instead of passing freely through the lungs and then stimulating the left ventricle, as they do in other states of system. I resolved, therefore, never again to give alcoholic stimulants in collapse, no matter how great the *apparent* exhaustion may be.

In a few cases, the *sesquicarbonate of ammonia* was given with apparent benefit; and this remedy appears to deserve a further trial as a stimulant during the stage of collapse.

It is worse than useless to attempt to *feed* a patient during collapse. The secretions of the stomach are utterly deranged, and the power of digestion is suspended. The mildest nourishment administered at this time only adds to the feeling of oppression and general distress, from which the act of vomiting often gives immediate relief. Upon this point, I have satisfied myself by repeated and very careful observation.

The wife of the English chaplain in Paris has recently obtained notoriety by administering *chlorodyne* in fifty or sixty cases of incipient cholera, and, as it is stated, "has succeeded in arresting the disease in every instance." What would be the effect of chlorodyne in cases of choleraic diarrhœa? It would relieve the cramps, and, by its narcotic operation, it would in some degree retard the spontaneous recovery of the patient. Nevertheless, if a lady have a determination to step beyond her own proper

sphere, and to play at doctoring, chlorodyne would be a much less dangerous drug in her hands than opium and strong astringents.

Dr. Bullar and Dr. Risdon Bennett have recently spoken in high terms of the good effects of *external warmth* to the skin of patients in collapse. Dr. Bullar recommends the hot mustard bath; and Dr. Bennett packing in hot wet blankets. There can be no question that to thoroughly warm a patient in collapse is often a real benefit; the pulse, the temperature and the color of the skin, and the expression of the features, all improve simultaneously. And we can readily understand this effect of warmth if we have thoroughly comprehended the *modus operandi* of hot saline injection into the veins. But too much must not be expected from the application of external warmth. The warm bath has often been found to have a very depressing effect. Annesley declares that, in his opinion, it did more harm than good. "The fatigue arising from going in and coming out of it, and from rubbing and dressing the patient, exhausted him." (*Diseases of India*, p. 156.) Christie found the bath injurious; and Dr. Parkes says: "I have seen a man walk firmly to the bath, with a pulse of tolerable volume, and a cool but not cold surface, and in five or ten minutes have seen the same man carried from the bath, with a pulse almost imperceptible, and a cold clammy skin. I cannot find in my notes a single case in which the warm bath appeared beneficial." (Parkes *On Cholera*, p. 210.)

During the epidemic of 1849, I saw several patients in King's College Hospital placed in the hot-air bath; and the result of my observation was that, while the warmth appeared to be beneficial, by relieving the cramps, and sometimes even improving the pulse, yet, on the whole, the patients appeared to be rather distressed than comforted by the bath. The employment of hot baths in the treatment of cholera obviously requires caution. Faintness is a not uncommon result of remaining too long in a hot bath, even when the bather is in health; and, in the collapse of cholera, a sudden and deadly exhaustion may be thus induced. Then be it remembered, that choleraic collapse is a form of asphyxia. There is an instinctive craving for air. Again and again will the patient toss all covering from his body; and it is likely that surrounding the body with hot water, or hot air, or wet blankets, may cause distress by interfering with cutaneous respiration—*i. e.*, the aeration of the blood through the skin. A very convenient way of keeping up the warmth of the body is by the application of hot bottles, hot dry flannels, or hot sand-bags, to various parts of the surface.

Dr. Murray, an Indian practitioner, obtained very striking results in the improvement of the pulse by *injecting into the rectum* every half hour, or hour, or two hours, according to the urgency of the case, a pint of a weak solution of common salt and carbonate of soda, at a temperature of 120°. (Rogers' *Reports on Asiatic Cholera*, p. 241.) The injections were retained generally from two to four minutes—sufficiently long to impart considerable warmth to the blood in the vessels of the large intestine; and to this, without doubt, the good effects were due. It appears to me that hot injections into the rectum may be used with advantage in cases of extreme collapse.

The good effects of heat are unquestionable. But what is to be said of *ice* or *iced water*, either taken into the stomach, or applied externally? During collapse there is usually a sensation of burning in the region of the stomach, and a strong craving for cold liquids. Iced water relieves that sensation of heat, and it has a powerful influence in checking vomiting. Are these sufficient reasons for giving iced water to a patient in collapse? In my opinion, decidedly not. I am sure that vomiting, when not excessive, is beneficial; and I believe that iced water lessens the burning sensation in the stomach by diminishing the vascularity of the mucous membrane, and thus interfering with the excretion of the morbid poison, upon the ejection of which by vomiting depends the patient's recovery. For these reasons, I believe that the administration of iced water to a patient in collapse is injurious. In most cases, I would allow an unlimited quantity of water of the temperature of the room; but, in extreme collapse, I would persuade the patient to drink *hot liquids*, with a view to add some warmth to the blood.

The application of *ice to the spine* has been recommended by Dr. Chapman. The theory which suggested this practice is a speculative web spun from the projector's brain. There is no evidence to show that

this practice has been useful in any case. That some patients subjected to this distressing mode of treatment would recover, is certain; it is equally certain that their chances of recovery would be lessened by the depressing influence of the ice on the nervous system, and its chilling effect on the blood. We know that, if we can thoroughly warm a patient in collapse, we improve his general condition; and this, whether the warming be effected by the external application of heat, or by hot injections into the veins or into the rectum. We therefore can have no difficulty in perceiving that to thoroughly *chill* a patient in collapse must be a painful and a dangerous proceeding.

Venesection, as we have seen, has often afforded great relief during the stage of collapse; and I have before pointed out that the only rational interpretation of its *modus operandi* is that, by lessening the over-distension of the right cavities of the heart, it increases the contractile power of their muscular walls. The symptom which appears especially to call for venesection, and which has most commonly been relieved by it, is rapid breathing, with an oppressive sense of suffocation. When, with these symptoms, there is a cessation of vomiting and purging, which is probably a result of the almost entire arrest of the blood in the lungs, I believe that venesection affords the only hope of benefit. If during the last epidemic I had known as much of the essential cause of collapse, and of the influence of venesection, as I now do, I believe that I might have saved more than one patient who, for the want of that knowledge, was lost.

In this communication, I have done little more than sketch the general principles of treatment. The only safe guide in conducting the details of treatment is to have a very clear and definite view of the pathological interpretation of symptoms, and of the mode in which remedies may assist the natural process of cure. Without this pathological knowledge, it is scarcely possible to avoid falling into some of the many errors which have affected the treatment of cholera, and which have often led to the neutralization of the good effects of one remedy by the simultaneous use of other means having an opposite and an injurious influence.—*British Med. Journ.*, Nov. 25, 1865.

President Lankester's Address in the Public Health Department of the Social Science Association. — (Continued from page 57.)

"I will not now attempt to settle the question whether these diseases are contagious or not; whether they arise from a special poison which is propagated in one body and is conveyed to another, or whether there are certain general conditions of external agents which engender poisons capable of spontaneously producing them. I need but generally remind you that amongst our sanitary reformers there are two great schools, the disciples of one of which maintain that the great mass of zymotic diseases are produced by special poisons, and are called contagionists; whilst the followers of the other school do not believe in the existence of special poisons, but maintain that certain general conditions of sanitary neglect and dirt are alone necessary to produce the group of zymotic diseases, and they are now called anti-contagionists. Now, I believe that the extreme views of each school are wrong; and I have a very deep impression that for sanitary measures to be directed by one or other party, in the present state of our knowledge of the diseases, would be to plunge us into worse evils than quiet submission to their unresisted influence. For an officer of health to suppose that cleansing, and draining, and washing, would arrest the progress of smallpox in a house full of unvaccinated persons, would be an utter absurdity; whilst the placing a cordon around an ill-ventilated and badly warmed house, expecting to keep off bronchitis and pneumonia, whilst the temperature is 12° below freezing point, would be equally absurd. But, whilst all are agreed that smallpox is a contagious disease and bronchitis is not, there is a large class of diseases on which sanitary authorities differ as to their nature, and the best modes of arresting their development. It is on this account that I now propose briefly to examine what is really known of the nature of contagious diseases and their mode of propagation; and if I succeed in nothing further, I hope I shall be able to show that it is of the utmost importance in all our sanitary operations that we should at least consider the issues of both theories; that, whilst believing in contagion, we should act as if all depended on the removal of the

general external agencies of disease; or, whilst believing in the spontaneous origin of diseases in dirt, we should yet do all to avert the possibility of their propagation by contagion. It is of the highest importance, at the same time, that we should pursue the inquiry into the origin and nature of those zymotic or pneumatic diseases which carry off annually upwards of 100,000 of our population. In order to do this, I think there are three circumstances that demand our attention. There is, first, the poison that is supposed to kindle the disease; and, secondly, there is the medium that conveys it to, thirdly, the person predisposed to take the disease. If we lose sight of any one of these elements in investigating zymotic diseases, we shall most assuredly go wrong, and practically commit great mistakes. Thus, let me take smallpox as an example. In order to propagate this disease, there must be, first, the poison-matter from a smallpox pustule; secondly, a medium of conveyance, either the point of a lancet or an atmosphere to convey the poisonous germs; and, thirdly, there must be a person predisposed to take it. If the poison be not there, no amount of predisposition, that we are aware of, will engender the disease. Again, if the poison be there, and the predisposed person, there must be a medium of conveyance; if a predisposed individual be at one end of a room and the affected individual at the other, and the current of the atmosphere blow from the unaffected to the affected individual, no poison will pass and no disease be established. Or, again, the atmosphere may be so extensive as to dilute the poison to a tenuity by which it becomes powerless; or the atmosphere may be artificially ozonized, or iodinized, or chlorinized, so as to destroy the germs of the poison. But let the poison be ever so intense, and the medium ever so ready to convey it, if the unaffected individual have had the smallpox or have been vaccinated, no disease will be produced. Hence, we must study the poison-makers, the poison-bearers, and the poison-takers.

"Now with regard to poisons, even the anti-contagionists admit that, in what they call miasmatic diseases, conglomerations of dirt and filth, or matters in their wrong places, do enter the system, and, at one time or another, do upset and damage the healthy working of the machinery; and they are also bound to state in a scientific way what compounds are produced by dirt, and in precisely what way they affect the system. There can be no doubt that certain inorganic agencies, such as carbonic acid, sulphuretted, phosphuretted, and carbonated hydrogens, ammonia, and sulphocyanogen, do produce injurious effects upon the system. Continued exposure to such exhalations may prevent a proper oxidation of the tissues, and render the body predisposed to take in the diseases of special poisons; but we have no evidence to show that any of these agents—although they will destroy life—are capable of producing alone any of the forms of miasmatic disease.

"Again, it seems demonstrated that there arise, during the decomposition of vegetable and animal matters, certain organic molecules, which being taken into the system, will produce certain definite changes in the system constituting well known forms of disease. Thus, ague and kindred fevers, called paludal, and paroxysmal fevers, do not seem to be produced by poisons formed in the animal system, but by poisons formed during the decomposition of vegetable matter. A certain amount, also, of the diarrhœa of summer is to be set down to the decomposition of animal and vegetable matters. Certain quantities of these matters are directly taken into the stomach and bowels; whilst others appear to come into contact with the mucous surfaces by inhalation. There is, also, one of the endemic and epidemic fevers of our country that is supposed by high sanitary and medical authorities to originate in the spontaneous decomposition of organic matters in drains and sewers; hence it has been called 'drain-fever.' It is, however, generally better known by the name of gastric or typhoid fever. That this disease is generated by a specific poison, has been demonstrated by Dr. William Budd, of Bristol; and, should it be capable of demonstration that this disease is really generated *de novo* by the matter of drains and sewers, it would be an interesting fact, as showing the possibility of a contagious disease being produced afresh. But, up to the present time, we have no conclusive experiment with regard to the origin of any of the specific contagious diseases. There is no error, perhaps, of more vital importance to the public health than that which was fallen into by some of our early sanitary reform-

ers—a belief in the spontaneous origin of the several forms of diseases produced by specific contagions.

"The most common forms of contagious disease in this country are smallpox, scarlet fever, measles, whooping-cough, typhus fever, typhoid fever, and our occasional visitant, Asiatic cholera. Of the intimate nature of the poisons producing these diseases, we know but little; but recent researches with the microscope lead us to hope that we are not far distant from the time when, at least, the form of these poisons will be made visible to the human eye. It is a fact known to all, that the blood contains two sorts of cells or globules, one red, the other white. The white cells are composed of matter in a state of vital change. It is these cells which accumulate in inflamed parts, and which form the pus found in vesicles, pustules, abscesses, and inflamed surfaces of the body. These pus-cells have a great power of multiplication; and they retain their vitality after they have been removed from the living body. We can convey common pus-cells from one living body to another, and make them increase. There is a disease of the eye attended with a large formation of these pus-cells, and these may be conveyed through the air from one person's eye to that of another, and produce the same disease. In the disease known as pyæmia, these cells assume a specific character; and Dr. Richardson informs me that he has succeeded in producing, artificially, pyæmia in animals by introducing the secretions of an animal affected with pyæmia into one that is not. In smallpox, we have a disease characterized by pustules over the body. Each pustule contains a secretion abounding with pus-cells, and the matter of which they are formed. It is the introduction of this purulent matter into the blood, that sets up the dreadful malady of smallpox. In the same way, we find the vesicle of cowpox charged with white cells, and the 'germinal matter' of Dr. Beale. The germinal matter here, however, does not possess the vitality and energy of that of the smallpox pustule. It is seldom conveyed through the air; like some other animal poisons with which we are acquainted, it requires contact; but, on being introduced into the blood of another person, it produces the same disease—always the same disease, never another. We may learn much of the nature of these poison-cells by the study of those which we know so well. These cells, or germinal elements, retain their vitality long after they have been removed from the body, if you exclude them from the air. The vaccine lymph has been conveyed between pieces of glass, or dried on tips of bone or threads of linen and cotton, all over the globe, and has been found capable of engendering the disease cowpox. This shows us how all these poisons may be covered over in linen, cotton, and woollen fabrics, how they can be conveyed in letters and newspapers, how they may adhere to inanimate substances of all kinds, and only need the awakening influence of a little moisture to summon them to awake and live anew.

"No one, that I am aware, has yet isolated the poison of scarlet fever, of measles, of typhus, of cholera, and of the other diseases of the group of contagious diseases; but, reasoning from analogy, and there could hardly be a better instance of the process, we are driven to the conclusion that these diseases depend on a cause similar to that of smallpox, and that the real form of the poison is the charged white cell of the blood. It is, however, interesting to notice some varieties in the habits of these poisons. Thus, we are not aware that the poisons of smallpox, measles, scarlet fever, or typhus, are conveyed by any means but through air; whilst there is every reason to believe that the poisons of typhoid fever and cholera are conveyed by the agency of water. There is an interesting relation between this fact and the seat of the disease; for, whilst one set of diseases manifest themselves by eruptions upon the skin, the other set is characterized by derangements of the mucous membrane of the intestines.

"A question of high interest arises here, and it is one that has not at present been settled; and that is, as to whether the poison-matter of these diseases is capable of multiplying itself by cell-division, or the ordinary forms of the growth of fluvial matter out of the body. It does not seem impossible that this should be the case, although at present we have no demonstration of the fact. We know that such multiplication takes place among the lower forms of plants, as the yeast, or ferment-

fungus (*Saccharomyces Cerevisiæ*), and that it also occurs amongst the vibriones and monadinæ in the animal kingdom.

"Another interesting question connected with these poisons, is the possibility of transformation or development. In the animal kingdom, we have this phenomenon taking place, that an animal passing from its egg to its adult state is capable at each stage of multiplying itself, so that a number of creatures are produced at each period of its growth, capable of attaining, under proper external circumstances, the adult stage. Now it may be that, amongst these cell-poisons, there are stages of development at each of which the cell is capable of propagating its own form and no other, till it meets with the proper external circumstances for a further change or development. Professor Huxley relates that, on board the *Rattlesnake*, after they had been six weeks at sea, the cook got an attack of erysipelas; this spread through the ship and ceased. After this, one of the sailors had mumps, and this also spread through the ship. There are other interesting facts bearing on this point; but I throw out these hints here as subjects full of practical importance to the sanitarian.

"Let me now say a few words with regard to the means of conveyance of poisons. The most obvious of these means are the atmosphere and water. The air, to carry most poisons, must be warm and moist. The poison of yellow fever spreads in hot climates; the poison of typhus is arrested by heat on the one side and by cold on the other. It prevails, in fact, only in climates having a range of temperature between 40° and 62° Fahrenheit. At the temperature of boiling water, all these poisons are destroyed. A most important fact, as we have in every household in Europe the means of destroying them.

"But there are other means of conveyance besides air and water. Articles of food, articles of wearing apparel, bed-clothes, curtains, carpets, and all vessels and depositories containing the secretions of human beings, may retain the poison-cells in all their integrity. These things may carry the poisons from household to household, disseminate them in our streets, our omnibuses, our railways, steam-ships, and public conveyances of all kinds. The drain may carry them into the sewer, and the sewer into the river; but, in their course, they may escape from our ventilating-shafts, our gully-holes, and open closets. They may be emptied into our wells and rivers, and conveyed to our bodies by means of spring-water or river-water. They may be shut up in drawers or in old closets (of which there are many striking instances on record), and, at any moment when brought into contact with the human system, they may start into life and activity again, to renew their ravages on systems predisposed to their action.

"That the poison of a disease may exist, and every possible access to a system be present, and yet the disease be not taken, is well known. Instances frequently happen of persons living to old age, without having had any of the ordinary contagious diseases of mankind. It would be well to make a more accurate study of these cases. But we know something of the laws of the predisposition to disease. We know, for instance, that persons who have had the smallpox are not disposed to take it again. We know that, in nine cases out of ten, if persons have been vaccinated, they will not take smallpox. This is one of the great triumphs of our modern civilization. It is the beacon of our hopes with regard to crushing out for ever the poisons that can only be propagated in human systems. But our knowledge of predisposition extends further than this. We know that, where the four great factors of our life have been scantily supplied or vitiated, there predisposition exists, not only to idiopathic and self-generated disease, but to receive the germs of the poison fevers of which I have been speaking.

"So well is this known, that we can point out certain external conditions, which will so act upon the human system as to predispose it to certain forms of disease. Thus, amongst our working men and women, who live in badly ventilated and overcrowded houses, we find those who are most ready to take the poison of typhus. Amongst the underfed, the fever called relapsing, which differs from typhus and typhoid, finds its most ready victims. Hence it has been called famine-fever. But no class or condition of men have been discovered who are not susceptible of these poisons. The medical man who lives free from the influence of overcrowding or famine, in his own home is frequently stricken down with these fevers. The

anxiety of the student, the statesman, or the prince, may undermine his health, and render him a ready victim for the poison that lies concealed like a snake in the grass in his path. It is not necessarily among the overcrowded and badly ventilated rooms of the poor, and the squalor and filth of our lowest classes, that scarlet fever selects its victims and commits the greatest ravages. The homes of the rich and the hearths of the comfortable middle classes of England are made desolate by this all-pervading scourge; and it is a mockery to say that we know the conditions of those who will be the subjects or the victims either of scarlet fever or its twin-sister of mischief, diphtheria. That both these diseases depend on a special poison, which can be communicated through the medium of the air, and preserved in activity on inanimate substances, as clothes and excreta, I have no doubt; but we cannot predict with any certainty who will be their victims."

MEDICAL NEWS.

DOMESTIC INTELLIGENCE.

Approach of Cholera to our Shores.—The steam-ship England, of the National Steam Navigation Company's line, from Liverpool to New York, put into Halifax on the 9th of April, cholera having broken out among her passengers six days previously. She had twelve hundred and two passengers and a crew of one hundred men. No cholera existed at Liverpool at the time of her sailing. The disease broke out among the German passengers, and at the time of her arrival at Halifax one hundred and sixty cases had occurred and fifty deaths. She was put into quarantine, the disease soon disappeared, and she was then allowed to pursue her voyage to New York, where she is now at quarantine.

On the 18th of April the steam ship Virginia, belonging to the same line, arrived at New York with ten hundred and eighty passengers, most of whom were Germans, who had only been a day or two at Liverpool before embarking. Eight days after leaving Liverpool one man who had had slight diarrhœa from the time of sailing, suddenly grew worse and died. On the day of his death (12th April) two other passengers were attacked, and afterwards the epidemic extended until over a hundred cases had occurred before her arrival, of which number forty-seven have died. The whole number of deaths up to the latest accounts is said to reach a hundred and fifty; and the number of new cases is largely on the increase. It is stated, and this is worthy of note, though the same has been before observed, that the disease broke out on board the Virginia when she was in the same latitude as the England was when the disease appeared on that ship.

The ship has been detained at quarantine and every measure taken to cleanse the vessel to make the passengers comfortable and prevent the spread of the disease so far as quarantine measures can effect that object.

Trichinæ in Pork raised in the United States.—A committee was appointed some time since by the Chicago Academy of Sciences to ascertain, first, whether Trichinæ actually exist in the hogs of this country, and in those of the Northwest in particular; and secondly, should they exist, to determine the extent of the danger thereby incurred, and to ascertain the best means of averting it. For the attainment of the first object portions of muscles from 1394 hogs in the different packing houses and butcher shops of Chicago have been examined, and the results presented in tables.

These tables show that the committee "have found trichinæ in the muscles of twenty-eight hogs out of 1394 examined. We may therefore conclude that in the hogs brought to Chicago one in fifty is affected with trichiniasis in a greater or less degree. We must confess our surprise at arriving at this result, which indicates, with little doubt, the startling fact that trichiniasis in pork is even more common in this country than in Germany, where it caused so much suffering and death. For instance, in the city of Brunswick, where a most careful inspection of 19,747 hogs was made in the years 1864-5, only two were found to contain trichinæ in their muscles, the proportion being 1 to 10,000 against 1 to 50, as before stated, in our country. The comparative immunity from disease which our own people have enjoyed, undoubtedly results from our habit of cooking meat before eating it, while in Germany it is eaten raw by the poorer classes on account of the high price of fuel."

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NOT TO BE TAKEN FROM THE ST

The committee have found the spinal muscles more liable to be infested with the trichinæ than other muscles.

The committee point out the following as the means of guarding against the evil :—

"Now that the existence of trichinæ in our pork has been established beyond a doubt, it will be proper for us to point out all known means of defence against its ravages. First, with regard to the rearing of hogs. These animals undoubtedly become infested through the eating of flesh of some kind, since no trichinæ, nor germs of trichinæ, have ever been found in any vegetable food. A strict attention to the feeding of hogs, and their confinement in pens where no animal food is accessible is an infallible preventive against trichiniasis in them. Such management is all the more necessary, since European authorities agree that it is impossible to diagnose the disease in the animal from external appearances, and no culpability can therefore attach to the farmer for selling hogs which prove to be affected with trichinæ.

"In regard to pork, the use of the microscope is primarily indicated. With this instrument only can we ascertain with certainty whether the muscles of the hog are free from the parasite. The general use of the instrument is, however, impracticable, unless a system of microscopic inspection be adopted here, as in Europe, at the great packing establishments. But we have in our power much more simple means of insuring safety in the consumption of pork. It is simply necessary to cook it thoroughly, so that every portion of the meat shall have experienced a temperature of at least 106 degrees Fahrenheit. We cannot insist too strongly upon this point. Again, by properly salting and smoking the meat for a period of at least ten days, the trichinæ, should they exist, will be certainly killed. Simple desiccation of the meat, if continued for a period of sufficient length, will also kill them. They will never be found alive in old hams, for instance. On the other hand, mere pickling appears to have very little effect upon these worms."

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Medical Society of the State of Pennsylvania.—Owing to the difficulty of securing adequate accommodations in the town of Kingston, which was selected for the next annual meeting of the Medical Society of the State of Pennsylvania, and in accordance with the wishes and request of the Luzerne County Medical Society, the meeting of the State Society will be held on Wednesday the 13th day of June next, at Wilkesbarre, the county seat of Luzerne County, and only one mile distant from Kingston.

Delegates upon arriving at Wilkesbarre are requested to report immediately at the office of the Wyoming Valley Hotel, where the committee of reception will be in attendance.

Efforts are making to secure commutation tickets over the various railroads leading from different points in the State to Wilkesbarre.

By order of the committee of arrangements.

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Medical College of Ohio.—At the annual commencement, held on the 1st of March last, the degree of M. D. was conferred on 67 candidates.

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St. Louis Medical College.—At the annual commencement, held on the 2d March last, the degree of M. D. was conferred on 50 candidates.

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Miami Medical College.—(Cincinnati.)—At the annual commencement, held on the 1st of March last, the degree of M. D. was conferred on 26 candidates. The number of matriculants during the session was 154.

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Medical College of the State of South Carolina.—At the session of 1865-6, the number of matriculants was 34, and at its close the degree of M. D. was conferred on 13 candidates.

The next course of lectures in this institution, which has been in successful operation for upwards of 40 years, will commence Nov. 5, 1866.

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Legal Liability in Cases of Surgical Malpractice, in its Principles and Limits.—By Geo. C. Blackman, M. D., Prof. Surg. in Med. College, Ohio, and Stanley Mathews, Esq., of the Cincinnati Bar. This is the title of a work announced as in preparation, and which is promised to be published early in the coming autumn. The numerous vexatious trials to which our profession have been subjected for alleged malpractice, render a complete collection

and digest of cases very desirable to both the medical and legal professions.

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New Medical Journals.—We have again to add to our list of new Journals. Since the rush to California after the discovery of the gold placers there, nothing like the present rush into medical journalism has occurred, and we can only express the hope that the science of medicine may be explored with the same productive energy as were the gold mines.

The first we have to notice is the *Southern Medical and Surgical Journal*, the publication of which was suspended during the rebellion, and which is announced to be revived under the editorship of Dr. Joseph Jones. No. 1 of the third series is to appear on the first of July next. It is to be a bi-monthly.

The second is the *Nashville Journal of Medicine and Surgery*, the first No. of which is to appear on the 1st of July next, and to be continued monthly thereafter. The editor and proprietor is Dr. W. K. Boling.

Third. The *New Orleans Medical and Surgical Journal* is to be renewed under the editorship of Drs. Chaillé and Nichols, and a number is announced to appear in July next.

Lastly we have received the announcement of the *New Orleans Medical Record*, the first No. of which is to be issued on the 1st of June, and semi-monthly thereafter. This is the fourth New Orleans Journal.

We shall be happy to extend to all these journals the usual editorial courtesies, and to place them on our exchange list.

FOREIGN INTELLIGENCE.

Dr. Bence Jones' Discovery of a Quinine-like Substance in the Animal Body.—At the last Friday evening meeting of the Royal Institution, Dr. Bence Jones gave a singularly lucid and interesting account of one of those discoveries which, from time to time, open up entirely new fields of research. It seems that Dr. Bence Jones some months ago desired to detect the presence of quinine in the animal body. For this purpose a test was essential, and the test he adopted was that peculiar influence (fluorescence) of this alkaloid on the refraction of light, whereby it makes the dark part of the spectrum beyond the violet ray luminous. Having fixed on this as a test, and prepared standard solutions of quinine so that he might be able to get something like a notion of quantity, by comparing the effects of solutions of various strengths on the spectrum, he set to work on a guinea pig—gave the creature three grains of quinine, then tested the blood, and crystalline lens, and other parts, and obtained the most satisfactory evidence of the presence of quinine. Luckily, however, for science (though, as may be imagined, it was a source of great perplexity at the time), Dr. Bence Jones, in order to complete the experiment, submitted the same parts of a guinea pig, which had taken no quinine, to the same test, and out came the same reaction; every part of the *non-quinized* animal—heart, liver, kidney, and lens—when treated like bark, in such a way as to dissolve out and purify any alkaloid that might be in them, gave the same spectral reactions as similar solutions did from the animal that had taken quinine. Here was a puzzle! Undismayed, however, Dr. Bence Jones set to work to make out the mystery. He soon convinced himself that the tissues of all animals contain a something which, if dissolved out like quinine, gives the same fluorescent reaction with light. One solution of quinine, interposed in the rays of light, cuts off the fluorescence of another; so does a solution of the quinine-like substance; and so does each upon each interchangeably. Common salt and hydrochloric acid also lessen the fluorescence of both. This quinine-like substance, too, can be demonstrated in the tissues (in the lens) fresh, or preserved in glycerine; and can be demonstrated in the living as well as in the dead. Mr. Bowman had shown it in the eyes of his dog, and Dr. Bence Jones sat down before the electric light, which Professor Tyndall adjusted so as to let the audience see the strange fluorescent gleams from the interior of his eye. It has been found impracticable as yet to isolate this substance, so rapidly does it undergo oxidation; but Dr. Bence Jones had carried out an interesting series of investigations which convinced him that this quinine-like substance was part of the natural constituents of the body; and that judged by the quantitative reactions, the quantity of it was temporarily increased by giving quinine. It was shown by this means that quinine

in a very few minutes after its administration passes into every tissue of the body; that its maximum effect is produced in two or three hours, and then decreases till it disappears in about seventy-two hours. The demonstration of its presence in the crystalline lens gave ground for hope that substances might be found hereafter to remedy perverted nutrition of the non-vascular tissues—as cataract, and even the deposits of gout in cartilages. Then, what a glimpse these investigations afford of the possible *modus operandi* of quinine in the cure of ague! We call quinine a "specific," a term which indicates our notions, or want of notions, of its action, and nothing more. But is it not possible that ague may depend on the absence of a natural quinine-like substance from the tissues? That quinine may supply this want (thus, by the by, showing the futility of all attempts to distinguish between food and physic), and that arsenic, on the other hand, may act within the body as it does without, by preserving certain matters from decomposition? Such is a rough note of this very interesting address, which was as valuable for what it promised for the future as for what it showed at the present.—*Med. Times and Gaz.*, March 31, 1866.

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Dr. Richardson's Method of producing Local Anæsthesia.—In the No. of the *American Journal of the Medical Sciences* for April last, p. 512, will be found an account of a very ingenious method devised by Dr. Richardson for the production of local anæsthesia. That method has attracted much attention, and it has been employed in England generally with success. It is stated in the *British Medical Journal* for Feb. 24, "We understand that on Sunday last Mr. Gowlland operated on a member of our own profession for fistula, Dr. Richardson himself applying the anæsthetic. The result was so good that the patient, after the operation, was not aware that the cut had been made. On Monday, Mr. Erichsen performed the operation for phimosis, Dr. Richardson again producing anæsthesia; and insensibility was produced in fifteen seconds, and the knife gave no pain whatever. On Wednesday, Mr. W. Adams removed a tumour of the size of a walnut from the foot of a young lady, Dr. Richardson in this case also applying the process. The insensibility was perfect in a minute; and Mr. Adams leisurely dissected out the tumour, without any sensation of pain being experienced by the patient. While the knife was slowly making its way, the lady was asked what she felt. She said she was conscious of the course of the knife, but that it was merely as though something was passing lightly over the surface, although the knife at that time was half an inch deep. On Tuesday, at University College, Mr. Henry Thompson applied the anæsthetic in two cases. He opened an abscess in the breast, and performed eversion of a diseased nail. The ether-jet was applied in each case only a few seconds, and both operations were absolutely painless. Different statements are made by different patients in regard to the sensation produced by the application of the anæsthetic. The lady, from whose foot Mr. Adams removed the tumour, said the sensation was rather pleasant than otherwise; others describe it as slightly unpleasant, and others as burning and sharp. On this point, Dr. Richardson says, a great deal depends on the part of the body subjected, and a great deal on the rapidity of the process. The mucous surfaces, the hands, and the face, are more sensitive than the other parts of the body. More also is felt when the process is prolonged. It is best to push the process on rapidly; and it is good practice, in cases where it can be done, to compress the artery above the part to be operated on, so as to cut off for the time the supply of blood. Other methods for making the process itself quite free of sensation in every case may be devised; and, as Dr. Richardson is now devoting himself closely to experiments bearing on this subject, there need be no anxiety but that this object will soon be accomplished. He is also having a larger apparatus constructed, on what he calls the brush-principle, with the view of applying the method in a capital operation."

In the number of the *Med. Times and Gaz.*, for April 7, 1866, Dr. Richardson has published an account of a case of Cæsarean section in which he successfully produced local anæsthesia by his spray apparatus.

This invention of Dr. Richardson's seems to be one of the greatest boons conferred on humanity, for fatal results have sufficiently often followed the inhalation of chloroform to excite anxiety, whenever that method of producing anæsthesia is resorted to.

Animals cannot Live after being Completely Frozen.—M. Pouchet has lately made some careful experiments which tend to show that there is no truth in the statements which have been from time to time made, that certain animals will live after having been completely frozen. He shows that the blood globules are seriously altered by the congelation; and that the blood thus vitiated destroys life when allowed to enter again into circulation. But, in cases of partial congelation, if the blood thus altered be allowed to enter only in small quantities at a time into the current of the circulation, it may be gradually mixed with the blood without destroying life; just as Claude Bernard has shown that a deadly dose of woorara poison introduced into the limb of an animal may, by means of a ligature, be allowed gradually to enter into the circulation, and so as not to destroy life. The first phenomena of congelation observed are, the contraction of the bloodvessels, the consequent exclusion of blood from them, and pallor of the part. Then follow alteration and destruction of the blood globules. If the whole animal be frozen, then the whole mass of blood is altered, and death is the necessary result. When only a small part of the body is frozen, only a small quantity of altered blood passes into the circulation, and consequently life may not be compromised. An animal partially frozen may be kept alive for a long time, if the congelation be maintained; but will perish rapidly, if the frozen part be thawed, and so as to allow the altered and destroyed blood globules, etc., to enter rapidly into the circulation. Hence, in all cases of congelation, life is destroyed not by a stupefying action of the cold on the nervous system, but by the resulting changes effected in the blood by the freezing. The practical conclusion is, that, when a part has been frozen, it should be gradually thawed, and so as not to allow the altered and consequently poisonous blood to pass in too great quantities at a time into the circulation. — *Brit. Med. Journ.*, Jan. 6, 1866.

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Professor Schönbein's Researches on Oxygen.—Various scientific journals having recently announced that Dr. Schönbein, of Basle, had succeeded in decomposing oxygen into ozone and antozone, the French Scientific Association addressed a request to him that he would repeat before it the experiments establishing this discovery. In his reply the celebrated chemist observes:—

"You are perhaps aware that for the last 30 years I have been almost exclusively and uninterruptedly engaged in researches relating to oxygen, and in the course of this long series of investigations I have discovered, concerning this elementary body, a considerable number of new facts, from which I believe I am able to draw the following conclusions: 1. Oxygen may exist in three different allotropic conditions. 2. Two of these states are active, and opposed to each other; I designate them by the names ozone and antozone. 3. Equal quantities of ozone and antozone neutralize each other, forming inactive or neutral oxygen. 4. Neutral oxygen may be separated or transposed, one-half into ozone and one-half into antozone. But it is to be observed that the experimental demonstration of the justice of these conclusions is not as simple as, for example, that of the decomposition of water, and in order to apprehend their logical sequence, it is absolutely essential to become acquainted with a considerable number of facts relating to it. The exhibition of these facts by suitable experiments could not be accomplished at a single demonstration. The journals, moreover, have been in error in announcing that I had succeeded at isolating ozone and antozone in a state of purity. It is true, for a long time past, I have been engaged in attempts in accomplishing so desirable an end, but have not thus far met with complete success. Ozone and antozone are always mingled with neutral oxygen, which depends upon causes intimately connected with the generation of the two active modifications of oxygen. If the Association, after what I have said, continues to wish that I should visit Paris, and if the state of my health allows of my doing so, I shall have great pleasure in delivering a short course of lectures relating to the entire subject of my researches on oxygen."

We need hardly add how acceptable such a course would be from the distinguished discoverer of ozone.—*Med. Times and Gaz.*, March 31, 1866.

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Alcohol from Mulberries.—Many farmers in the south of France not deriving any profit from the leaves of mulberry trees since the disease has prevailed among silkworms,

rooted up the trees. One of them, however, M. Felix Boyer, more sagacious than the rest, has sought to utilize the fruit, as the leaves had become valueless. He has found that ripe fruit pressed and fermented, furnished on distillation a pure and well flavoured alcohol, rivalling the best alcohol from grapes. 150 kilogrammes of the mulberries yield a hectolitre of juice, which yields on distillation 14 to 15 per cent. of alcohol.—*Revue de Thérapeutique Méd. Chirurg.*, March 1, 1866.

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Trichiniasis.—The *Wiener Medizinische Wochenschrift* states that the trichina disease has extended into Austria, and has appeared in Weigsdorf, Seitendorf, Königshain, Turnau, and Dornhemmersdorf.

—

Rinderpest.—Much nonsense has been written about this disease, which has been prevailing so disastrously in Great Britain, and its importation into this country is so much feared. The following opinion of Prof. Gamgee, the highest authority on the subject, is worthy of attention. "Nothing but the most culpable ignorance could have led us to overlook the benefits of 'vaccination,' as a preventive against the cattle-plague, had any such benefits been observed and recorded in Russia. It is not vaccination but inoculation that is resorted to there, and this was first practised in England one hundred and twenty years ago. No sooner had Dodson taken up the idea from the inoculation for human smallpox, than the Dutch, Danes, and Germans conducted numerous experiments, and often with the result of losing only one per cent. of the inoculated animals. Skilled inoculators came in vogue. Many were their failures, loud were the complaints of the farmers in this and other countries; but nevertheless early in the present century, Walz and others suggested that all the calves in Russia should be inoculated, so as to render the entire horned stock of the country insusceptible to attacks of the plague. Prof. Jessen, of Dorfat, has very ably advocated the practice of inoculation in the Russian Steppes, and published a pamphlet on the complete extirpation of the rinderpest by this means in 1852. At that time a commission had been appointed by the Czar to advise as to the best means to be adopted for the prevention of the cattle-plague, which led to an annual average loss of 10,000,000 roubles. The only recommendation made by this commission was in favour of experiments as to the value of inoculation. Prof. F. Unterberger was sent to Southern Russia, and he turned his attention to cultivating lymph by passing it through the systems of animals, so as to modify its character, and he specially chose lymph from animals which indicated an eruption on the mammæ and mouth, an eruption which the history of rinderpest taught him had been more common when the successful inoculations of the last century were practised than it had been of late. The experiments which thus began in 1853, have been continued up to the present time, and I have in my possession all the reports published in the German language, and copious extracts from those published in Russian. The results arrived at are differently estimated by different individuals. Some still believe in the development of a great system of inoculation similar to that adopted for the vaccination of an entire population for the prevention of human smallpox. I am one of those who have no faith in the practice, and the ablest *résumé* yet published, which has but recently left the printer's hands in Dorfat, affords evidence of the hopeless nature of the task imposed on the Russians by those who believe that no horned animal of the Steppes should leave the supposed native haunts of the rinderpest without having been successfully inoculated.

"Vaccination, as now practised far and wide in this country, is another of the blunders of the present day. Rinderpest is rinderpest, and not smallpox. It is different from every other known disease of man or animals, though as a contagious fever it presents characters which some have regarded as not unlike those of typhus, typhoid fever, scarlet fever, or smallpox. It is none of these, and I regret that hasty conclusions as to points of analogy between rinderpest and variola have led to many fruitless and expensive experiments which have only served to direct people's minds from the one and only system by which such a malady can again be banished from our soil."—*British Medical Journal*, Feb. 3, 1866.

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The Cattle Plague.—This disease at the latest accounts was on the decrease in Great Britain.

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I am much pleased with the work; during the winter, I advised the class to use it, and regret that it only arrived in this city just at the close of the term. I shall employ it as a text-book.

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From J. Adams Allen, M. D., LL. D.,

Professor of Principles and Practice of Medicine, Rush Medical College, Chicago.

I shall take great pleasure in recommending this work as a text-book in our college, and also for the libraries of the profession generally. It is a timely and absolutely indispensable contribution to the literature of the profession.

From Walter Carpenter, M. D.,

Professor of Theory and Practice of Medicine, Univ. of Vermont.

I consider "Flint's Principles and Practice of Medicine" as the best book upon the subject, that has yet come under my notice, for many other reasons as well as the one above mentioned. I shall most surely recommend the work to my class, and only wish every member had a copy.

From Richard McSherry, M. D.,

Prof. of Practice of Medicine, Univ. of Maryland.

I am much pleased with this work, and I take pleasure in recommending it to the students who attend my lectures.

From Israel T. Dana, M. D.,

Professor of Theory and Practice of Medicine, in Bowdoin College, Brunswick, Me.

On examination I am much pleased with the book, and shall warmly recommend it to our college students, next month, when my lectures at Brunswick commence again.

It presents a brief, but concise and reliable summary of those pathological and therapeutical views that are most generally accepted by the profession at the present time; and consequently it is well adapted for a text-book in the hands of students. It will also form a valuable addition to the library of the practitioner.—*The Chicago Medical Examiner*, April, 1866.

The Practice of Medicine of Prof. Flint is, undoubtedly, a most excellent work, and is much better suited to the special needs of the American student and practitioner than any other accessible to them. We predict for the book a very great, and, as we believe, well deserved popularity.—*Cincinnati Journal of Medicine*, March, 1866.

Contains all that has recently been added to our knowledge of this department of medicine.—*Detroit Review*, April, 1866.

Henry C. Lea, Philadelphia.

THE MEDICAL NEWS AND LIBRARY.

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CHOLERA.

Pathology and Treatment of Cholera.—We have laid before our readers in the preceding numbers of the *News* for the present year the views of Prof. George Johnson on the pathology and treatment of cholera. We have done so, first, on account of their novelty, for we think it proper to lay before our readers all new views with regard to this fatal disease; and, next, because they are urged with considerable ingenuity, and have made converts of a number of distinguished men abroad. We are far, however, from being satisfied of their correctness; on the contrary, it seems to us that his pathological views are based upon mere hypotheses, and that the treatment which naturally flows from them is eminently dangerous.

His assumption that in cholera there is a morbid poison in the blood, that this poison acts *first* on the lungs, causing a spasm of the bronchial arteries, which arrests the flow of blood to these organs, and that the vomiting and purging are efforts of nature to eliminate such poison, are clearly mere hypotheses. Moreover, did there exist a poison to be eliminated, it might reasonably be believed that the profuse evacuations from the stomach and bowels would be eliminative enough without having recourse to emetics and purgatives. In a paper on the pathology of cholera read before the Philadelphia County Medical Society by the editor of this journal, in 1832, and published in the *Cholera Gazette* of November of that year, we think it has been conclusively shown that all the phenomena of collapse are mainly due to the loss of the water and saline ingredients of the blood through the secretions into the alimentary canal, and that the collapse is to a great extent, *cæteris paribus*, proportional to the amount of this loss. We say *cæteris paribus*, because the amount sufficient to prostrate some persons is much less than for others. During collapse, absorption is nearly or

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wholly suspended, and hence the difficulty of supplying the loss sustained by the blood; hence, also, the wonderful temporary benefit resulting from the injection of saline fluids into the veins; some patients apparently at the point of death being so resuscitated as to lead the bystanders to indulge in strong hopes of recovery. This revival is, however, but temporary. The mucous membrane of the alimentary tract is profoundly affected, as first shown by Prof. Horner, who demonstrated that the whole intestinal canal was, to a greater or less extent, denuded of its epithelial covering, and, therefore, rendered more or less incapable of performing its functions. The water injected into the vein is speedily poured out again into the alimentary canal. Medicines taken internally in this condition are wholly inoperative at the time, but should reaction fortunately take place and the function of absorption be re-established, their cumulative effects may then be experienced and the feeble flame of life extinguished by them. Great care should therefore be observed in this torpid condition of the system not to introduce into the stomach or bowels large doses of potent remedies, such as calomel and opium. We believe that the principal phenomena of the disease are the result of the loss of the watery constituents of the blood. The physiological importance of water to the organism has only lately been fully appreciated. Claude Bernard has shown that it is an *essential component* of all living organism, without which life cannot be maintained. Robin and Verdeil regard water as an *anatomical* or essential element of living structures. Hence the fatal consequences resulting from its loss.

We may enter more fully into the details of this subject hereafter, but at present we have only space to throw out some general views, and to recommend to the consideration of our readers the very sensible views presented by Dr. Maclean in a lecture recently delivered at the Royal Victoria Hospital, Netley, to be found below.

—

Lecture on the Treatment of Cholera. Delivered at the Royal Victoria Hospital, Netley. By Deputy Inspector General Maclean, M. D., Professor of Military Medicine.

The lecturer gave a *résumé* of what had been said in detail in previous lectures on the history of epidemic cholera and its progress through the various parts of the world, and particularly the routes by which it has invaded this country: showing how invariably it has followed the stream of human intercourse by sea and land; and dwelling on the fact so much insisted on by Budd, that it has invariably first appeared in this country at a seaport, and that the one having the most direct and frequent intercourse with an infected foreign port or country. Dr. Maclean reminded his audience of the mode in which it is propagated in India. Starting from some unsanitary city or district, that it is spread by pilgrims, bodies of travellers, or troops, in movement from village to village and from one district to another. How a tainted regiment propagates the disease along its line of route. How a healthy regiment meeting another suffering from cholera, and communicating with it, almost invariably contracts the disease; thus forming a fresh focus and centre of propagation along its line of march. How healthy bodies of men encamping on ground saturated with the discharges of cholera patients almost invariably suffer: and many facts of a like kind, all tending to show what strong ground there is for believing that this pestilence is propagated by human intercourse, and that, in all probability, mainly by the poisonous action of the excretions of the affected after they have undergone certain changes.

From this Dr. Maclean passed on to consider the most rational methods of prevention in barracks, camps, and garrisons, on the line of march, and in transports, pointing out that these rules are, most of them, quite as applicable to prisons, schools, or manufactories as to troops. Dr. Maclean showed by numerous striking examples the terrible results that follow when cholera obtains a footing in barracks or prisons that are overcrowded. The lecturer then urged the necessity of attention to the state of the latrines, showing that in India the dormitories most under the influence of a privy atmosphere invariably present the largest number of cases and the heaviest mortality. The necessity of paying scrupulous attention to the quality of the water-supply was next insisted on, and proof given of the importance of this both from Indian experience and from the history of the disease in this country.

Dr. Maclean then urged that no epidemic

of cholera should ever take medical officers serving in the plains of India unawares; that the probability of such an outbreak amongst the troops under their charge should ever be present to their minds, and all their plans and arrangements should, as much as possible, be made beforehand. He read the General Order of Sir Hugh Rose, deduced from the labours of the Cholera Commission in India, and explained its various provisions. This led to a full exposition of the duties of military medical officers during the prevalence of the disease in barracks, in camps, and on the line of march.

Dr. Maclean dwelt much on the importance of frequent inspection of troops by medical officers and intelligent medical subordinates for the purpose of detecting the stage of premonitory diarrhœa, giving many examples of a great saving of life by attention to this simple measure, and demonstrating how the same rule, if carried out in prisons, schools, and manufactories in this country during the prevalence of cholera would effect the same object. Premonitory diarrhœa is quite as common in this country as in India; and it is lamentable to see how much even well-informed people neglect the warning it gives. The late lamented Health Officer of Southampton was thus admonished for more than thirty hours before vomiting and rice-water evacuations appeared. Unhappily he, too, despised the indication of danger, and perished.

The treatment of this premonitory diarrhœa most insisted on was immediate recourse to the recumbent position, and the use of a warm, stimulating draught in combination with opium. Dr. Maclean spoke highly of the formula for the mixture in the "Medical Field Companion," intended to "promote reaction in diarrhœa and cholera": Oil of aniseed and oil of cajeput, of each one fluidrachm and a half; Haller's acid solution and tincture of cinnamon, of each two drachms. The dose of this is ten to fifteen or twenty drops, with the addition of fifteen or twenty drops of tincture of opium, or Battley's sedative solution. The mixture can be given again at short intervals. It is seldom necessary, or even expedient, to repeat the opiate. Great comfort and support is given at such a time by the use of a stout calico belt, lined with flannel, worn over the abdomen. Some care in diet is advisable for a few days.

Coming to the treatment of cholera when fairly established, Dr. Maclean thus expressed himself:—

Dr. John Macpherson, late of the Bengal army, and for many years one of the physicians to the Calcutta General Hospital, one of the most conscientious observers and recorders of facts in our profession, after approvingly quoting the melancholy words of Bouchardat (who concludes his account of what he calls the "*funeste champ de bataille* of the cholera epidemic of 1850" with the confession "that he had not only not seen a single efficacious remedy, not one discovery, not a single thought indicative of scientific progress"), adds: "The experience of the last fourteen years in Bengal has not been dissimilar. How many of the new remedies have stood their ground? Saline enemata, the successors of saline injections into the veins, have had their day. Croton oil and opium pills were at one time pronounced to be nearly infallible. Bloodletting I saw at one time employed; it is now entirely abandoned. A Madras surgeon found carbonate of soda wonderfully efficacious, as if to neutralize the acid of the Austrian cure. Ether and chloroform were immediately seized on, not only to allay the spasms, but to cure the disease. One surgeon recommended to the service the practice of parboiling his patients, but lived to abandon the procedure. The cold sheet, whether dipped in plain cold water, as in Bombay, or in an acid solution, as in Bengal, has been considered to work wonders. Quinine was recommended to the public, and immediately the newspapers were filled with the accounts of cures worked by the indigo planters by means of it. Nitrate of silver has been recommended here as in France, and may deserve a more extended trial. On the ground that, as an absence of bile from the evacuations was the great characteristic of cholera, its restoration *must* be the great remedy, ox gall was recommended—and tried." Among all these remedies, adds Dr. Macpherson, "I can scarcely say that any one is an important addition to our stock, except perhaps chloroform."

This passage was often in my mind in the early part of this winter, when men's minds were agitated by the presence of cholera in Southampton and other places. You must all remember how not only the professional journals, but the daily newspapers also,

teemed with "cures" and "remedies" for cholera. One gentleman thought he had made a great discovery in hot mustard baths, and announced it in *The Times* with an honest confidence that somewhat surprised others as well as myself. The truth is, that seeing how prominent a symptom low temperature is in this disease, attempts to stimulate the surface and restore the circulation in this way were amongst the earliest remedies that occurred to the minds of physicians—first in India, and subsequently in this country. I well remember that all the places set apart in Edinburgh for the reception of patients, on the occasion of the first epidemic, were fitted with every conceivable means for applying both dry and moist heat. The extract given above from Dr. Macpherson shows that in India the "parboiling" system has had its advocates; and hundreds of living Indian practitioners can testify to the futility, to say the least, of this method, even when mustard has been added to give more activity to the measure. My colleague Dr. Davidson, Assistant Professor of Pathology at Netley, assures me that he has seen as many as twelve patients subjected to this method of treatment in one night at Peshawur. I wish I could say that only negative results have been obtained; but it is not so. In any but the trifling sort of cases in which this remedy was used in Southampton, it is not only a useless, but a highly dangerous remedy. To take a man in the collapsed and pulseless stage of cholera out of the horizontal posture, where alone there is a hope of safety, and to plunge him in this condition into a bath heated to the highest bearable temperature short of absolute scalding, to which mustard in large quantities has been added to make it more stimulating, is, in my judgment, about the surest method that can be taken to exhaust the little remains of vitality left. Experience has abundantly proved this, for so many men have perished in this way actually *in* the baths that the practice thus urged on the attention of the public as novel and efficacious has long since been abandoned in India. The novelty to me was not the treatment, but the explanation of the *modus operandi* of the remedy. How mustard and hot water, used in this or any other way, can "aërate the blood in the capillaries," I do not understand, and therefore cannot explain.

Dr. Chapman has urged his treatment by the application of ice to the spine with much earnestness on the profession, on the following theoretical grounds. "1st. That the primary cause of cholera is, as a general rule (liable to exceptions which will be indicated), the excessive heat of hot climates, and of temperate climates in the summer when cholera prevails. 2d. That the *proximate* cause of cholera is of precisely the same nature as that of summer or choleraic diarrhœa;" that is, as Dr. Chapman has explained in another place, "the dorsal nervous centres and those in intimate connection with them which directly govern the alimentary canal become suffused with blood much more copiously than is natural by the stimulant effects of the excessive external heat in hot climates, and of temperate climates in summer, and most rapidly by the direct rays of the sun on the back of the patient; the result on the intestinal canal being, that the bloodvessels nourishing the tube receive a larger supply of nervous influence from the vaso-motor nerve-centres than before, and hence, *contracting* more vigorously than natural, cut off to a proportionate extent the supply of blood to, and consequently the nourishment of, the intestinal walls. The bowels thus lose their wonted robustness, and become susceptible of being excited and thrown into excessive or convulsive activity by a stimulus which in their healthy condition would but slightly affect them." This hyperæmic condition of the nervous centres presiding over the bowels is, according to Dr. Chapman, the reason why the bowels, on the addition of the "nervous influence" which causes their peristaltic contractions, expel their contents with præternatural rapidity. In cholera this nervous hyperæmia is more developed, and consequently its action is proportionately more powerful and intense.

Dr. Chapman further regards the muscular debility, tremor, vertigo, impairment of respiration, cold breath, sense of faintness, &c., as due to the extreme hyperæmia of the spinal and sympathetic nervous centres, depriving the capillaries and vessels in all parts of the body of their wonted supply of blood. The rationale, then, of the ice-bag to the spine is that it corrects this hyperæmic condition of the nervous centres, and so restores the system to its normal condition.

I have only to say of this ingenious theory

that if heat acts so powerfully in this way diarrhœa ought to prevail most during the prevalence of the hot land-winds in India, which is certainly not the case. So constantly is high temperature in operation in the plains of India that if heat acts in the way Dr. Chapman supposes, it is hard to explain why cholera should ever be absent from the hot plains at all, and still more so why, without any diminution in temperature, this terrible malady has at various times been dormant for long periods of years. It is a noteworthy circumstance, too, to my mind equally hard to reconcile with Dr. Chapman's theory, that cholera is quite as fatal during a St. Petersburg winter as in the hottest part of Lower Bengal.

I had the pleasure of meeting Dr. Chapman in Southampton when he came down to put his ice treatment to the test of experience, and I had the advantage of hearing him expound his views, at a meeting of one of the Southampton Medical Societies. I took the liberty on that occasion to say that, although I differed materially from Dr. Chapman as to the mode in which the disease is propagated, I would gladly give his method a fair trial; and had the disease appeared in the Royal Victoria Hospital, I was prepared to do so. I do not think that the result of the trials of this method at Southampton were sufficiently extensive to warrant any confident opinion one way or the other. I have had too much to do with cholera to rush into large conclusions as to the effects of remedies in ten or a dozen cases. Every person smitten with the cholera does not, as a matter of course, die; but judging from recent cholera literature, in every case where death does not occur, the fortunate issue is, without hesitation, put down to the credit of the remedies used: and if we have regard to the variety and number of these remedies, to say nothing of their opposite qualities, the result is very puzzling to those who do not reflect on the fact, that a certain number of people recover under every variety of treatment not positively hurtful, and, I may add, quite as many where no "treatment" in the shape of drugs has been used at all. Dr. Chapman has since, I understand, had an opportunity of trying his method on a larger scale in Paris. I am quite prepared to hear that this more full experience has tended to lessen the confidence with which Dr. Chapman was inspired when I had the pleasure of meeting him here. The powerful action of ice to the spine on the uterus has been pointed out by Dr. Chapman. It was well illustrated in one of the cases of cholera at Southampton. The application of ice to the spine of a woman profoundly collapsed brought on the menstrual discharge, which had ceased for ten or twelve days. This, as Dr. Chapman has himself shown, should be kept in mind, as otherwise in pregnant women unpleasant consequences might result from the application of the ice-bag low down on the spine.

Of all the methods of treating cholera that have come under my notice, the most extraordinary is certainly that which, for want of a better name, I venture to call "the corking-up method." The essence of this plan consists in restraining the evacuation of the rice-water stools by mechanical means; by bandaging, and, it is gravely added, "by plugging the anus!" The author of this ingenious invention is of opinion that if he can only cork our patients up as he would a bottle, all must be well. It does not appear to have occurred to him that once the serum of the blood has escaped into the bowels it may as well be in the chamber-vessel as in the intestine, for all the use it is or can be to the patient. So completely does this fallacy of regarding the mere purging as the essence of the disease underlie this, as it does so many other remedies and modes of treatment, that the author of this hopeful method holds out as one of the advantages of mechanically restraining the evacuations, "that in time they will be re-absorbed!"—*i. e.*, that this poisonous excretion will be again taken into the system to the advantage of the sufferer! Why not treat our patients suffering under typhoid fever in like manner? The diarrhœa in that disease is very "exhausting." Why don't we learn from this gentleman, to cork our patients up, and so obtain for them all the advantages of this "re-absorption"? No wonder the public were stunned and bewildered by the cholera literature of the last three months; no wonder a cry of "no confidence" arose on every side when "doctors" thus "differed," adding to the panic and distrust by promulgating crude, contradictory, and often irrational modes of treatment.

It would be unprofitable to pursue this

part of my subject further. I wish I could hope that we have seen the last of a practice which is neither dignified nor useful.

I have felt it to be my duty to speak distrustfully of many methods of treating cholera which have lately been urged on the attention of the profession and the public. Many of them, if you will excuse a homely metaphor, are the cast-off clothes of Indian practitioners brushed up to look like new. "Old Indian" doctors know them well, and make a present of them to their new and complacent wearers without a sigh. Well, gentlemen, I know no "cure" for cholera. What is more, I suspect we are never likely to see one. Nevertheless, I believe we shall in time extinguish cholera as we have, in this country at least, extinguished plague. This is one of the certain triumphs that await the slow progress of sanitation. It is probable that a whole generation of obstructives must pass away before even the initiatory steps in this great movement are likely to be taken. We have sanitary commissions in all the great Presidency towns of India; but they are without the necessary authority to act in an effective way, and, in some instances, very notably in Madras, the whole weight of those in power is exercised to obstruct the efforts of the commissioners for the public weal. We are not very much better off at home. Men ignorant or indifferent in such matters abound in high places, and in almost every municipal body in the kingdom trading selfishness and apathy prevail to the detriment of the public health. It is now time for me to point out what can be done for the benefit of those who are smitten with this disease. Although I know of no cure for cholera, I am quite sure that, by good and judicious management, we can rescue a great many who, without this, would inevitably perish.

1. You will endeavour to secure for your patients the best hygienic conditions possible under the circumstances in which you may be placed. In India, if that be possible, treat your sick in tents, and avoid overcrowding them.[1]

2. It is incumbent on you at the onset of any epidemic visitation to look a little ahead, and so to arrange the duties of your attendants and assistants as not to exhaust their strength and energies in the first few days. I have seen great mischief and confusion result from want of attention to this. The first sufferers who come in under such a system are well cared for; while those who come last are neglected from inability on the part of the attendants to hold out any longer.

3. The next point is to have arrangements made, first, for the disinfection; and, secondly, for the removal of the excretions of the patients. If this be not done, the tents or hospitals, if a large number of patients are under treatment, will soon be filled with bed and body linen saturated with cholera discharges. The attendants, unless prevented, will empty the vessels containing the stools as near to the tents or hospital as they dare. As a disinfectant, Dr. Budd, of Bristol, proposes chloride of zinc; but, whatever the agent, disinfected they should be, and on no account ought the evacuations of the sick to be emptied into the latrines or waterclosets used by the healthy. They should be buried in deep pits strongly charged with disinfecting agents. All soiled linen should in like manner be disinfected, and then plunged into boiling water outside the building or tent. The last case of cholera that occurred in the garrison at Malta, in the late epidemic, was that of a woman who had stolen a *chemise*, the property of one who died of the disease. She put on this fatal shirt, probably soiled with discharges, and certainly unwashed, many days after the death of its former possessor, took the disease, and died. I mention this instructive fact on the authority of a letter from my friend Inspector-General Anderson, principal medical officer at Malta.

4. The next point is to look well to what Sydenham would have called the "constitution" of the epidemic with which you have to do. I have never seen any two exactly alike. At one time you will see the majority of the cases characterized by vomiting, excessive purging of rice-water stools, with distressing cramps; at another, you will find cramps absent. Again, you will observe that there is little purging, but excessive action of the skin; or (most fatal form of all) little purging, vomiting, or exudation from the skin, the sufferers dying

[1] Dr. Morehead objects to this, but, as it appears to me, without sufficient reason. When cholera prevails in an epidemic form, the ordinary hospital accommodation is not enough for our purpose, without exposing the sick from other causes to great discomfort and peril, to say nothing of other reasons.

almost before there is time for any of the well-known symptoms to be developed—the disease, as Magendie expressed it, "*commencing with death.*" Nothing can more clearly show how futile it is to expect a cure by merely "restraining the evacuations;" for, as I have just explained, the most fatal form of the disease is that in which there are no evacuations at all.

5. When first I went to India it was a common practice to withhold water, especially cold water, from cholera patients. A cruel and pernicious proceeding. The objection was, that it increased vomiting, and so exhausted the sufferer. Following the routine of the day, I have acted in this way; and I was taught by personal experience the folly of this article of prevailing medical belief. When a person has been drained by an hour or two of rice-water purging, the desire for water is urgent—instinctive: the system craves it as the "hart panteth for the water-brooks." Do not, then, be guilty of the cruelty of withholding water; give it often, and give it *cold*. Hot drinks are not relished by cholera patients. There is no necessity to give large draughts; but let not the fact that a portion of almost every supply is vomited lead you to withhold it entirely. If you have a supply of ice at hand, let your patients have as much as they please. I never saw a cholera patient to whom ice was not grateful.

6. Is it a judicious measure to apply heat externally; to cover your patients up with blankets; to stimulate the surface with counter-irritants, mustard, turpentine, and such like? Well, I have done all these things, and seen others do them again and again. Yet I question whether much is gained by them. I am quite sure that they are very distasteful to nine patients out of ten. But you will say, Patients are not good judges of what is good for them. Perhaps not. Still, I think physicians gain something in many diseases by attending to the instinctive promptings of their patients. I *know* it is so in the matter of drink in cholera; and I *think* in the matter of clothing and external heat we should follow this rule—where they are grateful to the patient they should be used, but, according to my judgment, they ought not to be persisted in if the reverse. I have not seen many cases of cholera in England, but I think I have observed greater tolerance of "blanketing" than in India. In Asiatics, the dislike to anything of the kind in this disease is universal. Mustard poultices are almost invariably applied to the epigastrium in cholera, and also to the calves of the legs. Sometimes they are beneficial; I do not think they can be hurtful.

7. Cramps are best relieved by the use of chloroform, given in doses of five or six minims in a little water; and if vomiting be excessive, a little may be sprinkled on a pad of lint covered with oiled silk or gutta percha tissue, and applied to the epigastrium; or spongio piline may be used for the purpose. I have used chloroform in this way, both externally and internally, very freely, and always with good effect. I have also seen a large dose of an alkali, the sesquicarbonate of soda or the bicarbonate of potash, instantly relieve the spasms, as well as mitigate vomiting.

8. No remedy has been more used, I should rather say *abused*, than opium. Most Indian practitioners have abandoned it as treacherous and dangerous. I must earnestly caution you against its use. In the stage of collapse, if it is retained, it is, it *must* be, useless. But when reaction sets in, the opium, previously inert, begins to act, and is at once a serious hindrance to the restoration of the secretions, and, if the quantity given has been large, often hastening on cerebral symptoms ending in coma. These are its dangers, without, so far as I know or could ever discover, a single compensating advantage.

9. What of astringents? No class of remedies have been more used in cholera. The great anxiety has ever been "to restrain the evacuations." Yet I am persuaded that the mere purging rarely kills; and, as I have already said, in the most fatal form of cholera there is no purging, or very little. Graves recommended acetate of lead with opium, and this combination has been more used than perhaps any other remedy in cholera. Sometimes capsicum is added by way of a stimulant. Here, again, we are met by the old difficulty: what service can we expect from such combinations during the condition of collapse? Very little, I fear. And what is likely to be the action of large quantities of this powerful sedative during the stage of reaction? Will it aid or embarrass the struggling system? Again, supposing the remedy to be retained and to act, how far do we benefit the patient

by controlling the purging? I don't believe that cholera is caused by "hyperæmia of the nervous centres from heat." If this hyperæmia be present, there is something else present also, some *materies morbi*, some subtle poison—what, I know not, I do not pretend to know. If it be the case, as so many suppose and as I believe, that this poison is in part at least eliminated in the intestinal canal, how far do we benefit our patient by restraining it? I have ridiculed the attempt to secure this object by mechanical means; will the use of astringent drugs stand the test of argument any better? But then experience has sanctioned them. Alas! I have had much experience, and I am sure that I was more successful, as a rule, when I withheld them. Still, there are cases where some astringent is necessary. Granting that the purging within certain limits is salutary, it may go on to such an extent as to lower the patient hopelessly. In such cases an effort must be made to restrain it. Acetate of lead should then be used, in solution, but without opium. In such cases pernitrate of iron, in full doses, might be tried. My friend Surgeon-Major Mudge, of the Madras Army, made a trial of turpentine in egg emulsion with an aromatic, and in a number of cases found it more than answer his expectations. The sufferers in whom Dr. Mudge tried it were all Asiatics. It does not seem to have caused vomiting or even nausea—the objection to which we might expect to find it open, as turpentine is generally a nauseous medicine. In one epidemic I found nitrate of silver exceedingly useful as an astringent in excessive purging, particularly, as I noted at the time, in children; some of my native pupils used it extensively during the same epidemic in the great native city of Hyderabad, and with so much success as to gain for themselves considerable reputation. I used it again the following year, with disappointing results—another proof of the "varying constitution of epidemics."

10. Calomel has been used to fulfil every indication in turn, according to the peculiar belief of the prescriber. Some give it as a purgative, others as a sedative, not a few "to stimulate the secretions." I have seen it given as a cure for vomiting. Then we have a pretty numerous class who give it for no reason in particular. Calomel is the trump card in their hands: so like good whist-players, "when in doubt," as men are apt to be in dealing with cholera, they "play trumps"—they give calomel. I have seen it given in every conceivable way, and for every possible or impossible end: in grain doses every hour or half hour, and by heroic practitioners in scruple doses again and again. But, gentlemen, it is the old story. Calomel is of no use during the stage of collapse; but by-and-by, when the powers of life begin to revive again after the shock is over, the first thing the system has to deal with and to dispose of is twenty or thirty grains of calomel. What results? Very often vomiting of that "green paint-looking matter" of which I spoke appears, and you know how hard it is to stop that: or bilious diarrhœa is excited, which soon brings the case to an end. At the best it disturbs the stomach and interferes with nutrition. At such a time Nature needs the helping hand of the physician to sustain and assist her in the life and death struggle, instead of being searched and goaded by powerful drugs, prescribed no matter with what intention. Called to see a case of cholera a few months ago, I found calomel in combination with opium being "poured in" every hour. I ventured respectfully to ask the reason why; the patient being in a state of collapse, the medicine was accumulating in the stomach like water behind a barrier. "What," I asked, "do you expect will be the action of all this calomel when the barrier gives way, when the functions begin to be restored?" The prescriber was not very sure, thought perhaps it might have "a cholagogue action—stimulate the bile." I might have asked, Is it not conceivable that Nature will do this herself? And why not stimulate the kidneys as well? Why concentrate all your attention on the bile? Is the biliary more in abeyance than any other secretion? and so on. I do not think these are impertinent questions. I recommend you to put them to yourselves when you are tempted in moments of doubt to prescribe as D'Alembert said we sometimes do—using physic as a strong but blind man uses a club in a crowd, hitting friend and foe with equal impartiality.

11. *Stimulants*, both of a medicinal and alcoholic kind, have been much resorted to in cholera, and very naturally. The prostration of the powers of both circulatory and nervous systems is so extreme that we cannot wonder that strenuous efforts have been

made to rouse and to sustain them by the free use of remedies of this class. Yet I think that those who have used them most, if observant and candid men, must admit that they have not answered their expectations; and at least all must allow they require to be given with a cautious hand. They are useful, as I shall presently show, when given at the proper time and in the right way. I do not think that they are of any use during the stage of collapse, when at first sight they might appear most appropriate.

We have thus examined the therapeutic value of the remedies that have been most used in cholera. The result is not encouraging. I may say I have tried most of them, and the above is the result of my experience. You will perhaps say—Do you then advise no treatment in cholera at all? Well, I can only say that in the collapsed stage I know no drug worthy of the smallest confidence. Must we, then, abandon our patients to nature, and do nothing? Must we suffer them to die without an effort to save them? My answer is, that efforts of the kind described above are futile; your remedies are either vomited, or, if retained, are inert, and if given, as they often are, in excessive quantities, they become a serious source of embarrassment, interfering above all with nutrition. If opium, the preparations of lead, or calomel, have been abstained from, Nature, in the stage of reaction, starts, so to speak, fair, which I am sure is not the case when weighed with one or other, or, as I have often seen, with all the above. Because I objected to bleeding intemperate old soldiers of twenty years' service in tropical and malarial climates, taking blood away to the extent of upwards of a hundred ounces when suffering from peri hepatitis, I was called the other day "the Micawber of medicine," the gentleman who waits to see "what will turn up." Well, I don't object to the name in the least; I had rather be the "Micawber" than the "Sangrado" of modern medicine. The more I have "waited" upon Nature, the less I have attempted to force her, the more I have found that "something" is pretty sure to "turn up" to the advantage of my patients. Very notably has this been the case in cholera. Some—unfortunately a great many—patients in severe epidemics will die, but such cannot be saved by pouring drugs into them in the collapse of this terrible disease.

Suffer me to recapitulate. Secure the best hygienic conditions possible for your patients; avoid crowding them; give abundance of water to drink and ice to suck; correct cramps and inordinate vomiting by the internal and external use of chloroform; apply external warmth and extra bedclothes if these are grateful to the patient, but if they make him restless do not press them. If the cuticular discharge is excessive, wipe the patient dry from time to time, disturbing him as little as possible. If vomiting be not excessive, and if the remedy does not excite it, ten drops of the mixture I have recommended in the premonitory diarrhœa may be given from time to time, chloroform being substituted if vomiting be urgent. As soon as vomiting ceases, you must support the patient by proper nutriment. At first I begin usually with thin arrowroot, well boiled, and flavoured with a little aromatic. I give this, commencing with a teaspoonful at a time, giving every now and then a teaspoonful of brandy in it, never over-distending the stomach. Instead of water, I now quench thirst with milk containing a little lime-water, and flavoured, if it be at hand, with a few drops of curacoa. This may be often given to the patient with a little soda-water. As reaction proceeds, I substitute strong beef-tea, or, better still, essence of meat, using it in the same cautious way—spoonful by spoonful at proper intervals; later still, eggs beat up with a little brandy, and flavoured as before with curacoa, is often relished. The greatest caution is required not to disgust the patient, not to re-excite vomiting, not to over-stimulate, and so to bring on cerebral symptoms during the febrile reaction. When patients are thus carefully nursed, it is seldom that reaction is excessive. Nothing but mischief may be expected from over-anxiety to hasten forward convalescence by too freely pressing food and stimulants on the patient. It requires a great deal of drilling and care to get orderlies and half-instructed nurses to understand this; and many cases go wrong from their over-anxiety to press both on those under their care. In a word, the treatment of cholera may be summed up in two words—*good nursing*. The difficulty is to obtain this when an epidemic rages. The man who in

such scenes maintains his presence of mind, preserves order, regularity, and good hospital discipline, and so arranges as to secure to each patient a fair amount of this good nursing, will save a larger proportion of cases than by any other method with which I am acquainted. What I recommend to others I followed in my own case. When struck down by this disease, I took no drugs. I experienced the burning thirst I have described; but instead of tormenting myself by abstaining from fluids, I drank freely of iced soda-water, to my infinite comfort and refreshment. When I vomited, which I did often, I drank again. A faithful servant, my only doctor, sat by me, and, when too feeble to do more than express my wants by a gesture, replenished my cup again and yet again. I vividly remember the resolution then formed, and never since departed from—to do unto others as had been done unto me; never to withhold a cup of cold water from a cholera patient. With daylight came a kind and judicious medical friend, who, instead of goading me with physic, sustained me with food, much in the manner I have advised in this lecture. With the result I had and have every reason to be satisfied and thankful. Dangerous reaction—*i. e.*, high fever, with cerebral symptoms and coma, I have seen; but only when Art, coming not to aid but to thwart Nature, has interfered with her eliminatory processes by the too free use of opium, astringents, and such like remedies. In such cases we must have recourse to free purgation by calomel, apply ice to the head, and restore the action of the skin by the wet-sheet cold sponging, and the like. When the secretion of urine is long delayed, I have seen good result from the free use of chlorate of potash, and the application of turpentine stupes over the region of the kidneys.

Note.—Since the above lecture was delivered, I have seen and read with pleasure and profit Dr. George Johnson's "Notes on Cholera." This able physician has been led to much the same conclusions as to the action of most drugs in cholera as are expressed above. Dr. Johnson puts more faith in the action of purgatives than I can do; for, like every known class of drugs, they have been freely used in India. I sincerely trust that Dr. Johnson may never see so many cases of cholera as I have done; but I cannot help thinking, should it be otherwise, that he will see cause to believe with me that, in a vast majority of cases, there is quite enough purging without artificial aid. Still, for my own part, if again smitten by cholera, let me rather fall into the hands of a *purging* than an *astringing* physician—one who thinks he does you service by retaining what Nature is so solicitous to expel from the system.—*Lancet*, Feb. 3d and 17th, 1866.

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Cholera on Board the National Steam Company's Steamer England.—The *Lancet* of April 28th contains the following account of the cholera on board this vessel, derived from a letter from the captain to the Secretary of the Company. The England—Capt. Grace—sailed from the Mersey on the 28th of March with 37 cabin and 1059 steerage passengers, and a crew of 122 men: in all, 1218 souls. The steerage passengers consisted chiefly of Germans, the majority of whom were from Holland (East Frieslanders), and amongst them were a great number of children. These people were of the lowest class, extremely dirty in their habits, all dressed in linsey-woollen clothing, and their diet consisted almost entirely of the sour kraut that they had prepared before sailing; they actually refused the food provided for them on board the vessel. The captain writes that some days after leaving Queenstown the cholera broke out amongst them; that in two days it began to spread fearfully quick, first amongst the steerage passengers, then amongst the crew, especially the firemen, four of whom, and the steerage steward, quickly succumbed. The captain made for Halifax as the nearest port, there, if possible, to check the spread of the disease. On the 13th of April, when he wrote, 140 deaths had occurred in the steerage, none in the cabin; but he adds, "they are still dying rapidly: some 50 more are dying now, and how many more will die God only knows." On arriving at Halifax the sick were at once removed, some to tents on shore, and others to a Government hulk lying near. These are all the particulars that are yet known. The *England* is one of the finest vessels belonging to the Company, is nearly new, of 3307 tons burden, and registered to carry 1100 passengers.

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Cholera at Liverpool.—Two or three portentous facts stand out in the history of the cholera which has broken out on board the

German emigrant ships. One is the existence of an European population so filthy, debased, and brutalized, as is described in the letters of our Liverpool correspondents. More serious still is the length of time between their departure from the Continent, and the outbreak of the cholera; for it is thus shown that passengers apparently healthy may carry cholera in their persons, clothes, or baggage. As to the dirty habits of the emigrants, they are described in the following terms by the highest sanitary authority in Liverpool:—

"I have asked the Medical inspector of emigrants, and one of the chief managers of the National Navigation Steam Company, about the condition of the passengers on board the *England* when she left this port. Both these gentlemen concur in saying that there was no appearance of sickness or of debility among them; but the manager states that the emigrants by the *England* were the dirtiest of the whole lot which have been passed this year. If he be correct, the statement is important, for the Dutch and Germans on board the *Helvetia* are the dirtiest people in their habits whom I have ever seen. The surgeons assure me that not unfrequently they rinse out with water the pan used for the reception of the excrement and urine of their children, and then employ it as a cup for drinking and for their dinner mess; and no power or persuasion will prevent them leaving their dejections on the floors, the bedding, or the clothes. The water of the *England*, and, indeed, of all the ships sailing from this port, is supplied from the same source as the town itself One of the chief passenger brokers of the people conveyed by the *England* says that the greater number of them came from South Germany and Switzerland, and merely passed through Rotterdam and Antwerp. The whole system by which these unfortunates are picked up, or rather trepanned, in Germany, and, for a fixed sum of money, hurried through to the ocean steamers for America, is very blamable, and should be placed by the several governments under regulations and restrictions."

The latest report from Liverpool states that cholera has appeared amongst the Germans or Dutch who have been removed from the *Helvetia* to the depôt at Birkenhead. The father of the child who died last week is stated to be ill of cholera in the workhouse; and five deaths from the disease have occurred on board the Hospital ship *Jesse Munn*. Seven more cases were under treatment on board the same ship. The town is flooded with Dutch and German immigrants. All the lodging houses are full, and 200 had to be accommodated by the parish authorities on Tuesday last. These people mostly arrive at Hull from Hamburg and Rotterdam, and it seems clear that if quarantine measures are to be of service, it is at Hull they must be put in force. It is proved that a mere medical examination is no safeguard. Detention of the apparently healthy may seem a harsh measure, but it is the only one which can be relied on, and the facts of the present importation seem amply to justify it.—*Med. Times and Gazette*, May 12, 1866.

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Cholera in New York City.—The first pronounced but probably the second case in reality of cholera, occurred in this city on the 30th ultimo. We are led to be thus qualified in our statement, since the fatal case in Delancey Street, reported some weeks ago by the physician in attendance, although still in controversy, had symptoms equally well marked. But be this as it may, the case to which we have alluded in the first paragraph, occurred in the person of an industrious Irishwoman, aged thirty-five years, who occupied, in common with two other families, a frame house, not noted for the salubrity of its immediate surroundings, upon the east side of the Third Avenue, between 92d and 93d streets. The building is situated upon a high bluff, swept by breezes from off Ward's Island, in which certain, or according to some observers, merely alleged choleraic cases occurred during the period extending from the latter part of last November to the close of the succeeding month. According to the report of the *Daily Times*, this woman, "just before she became ill, had with her own hands cleaned out the privy belonging to the house, and had used the contents as manure in planting potatoes in the garden." At noon, although feeling somewhat indisposed, she partook of a frugal dinner, complained of pains about 3 P. M., was in a state of collapse at 4 P. M., and died on the 1st inst., at 11 A. M. An autopsy revealed a general healthy condition of all the organs except the stomach and intestines, in which "the rice-water secretions" were abundant.

Joshua Jenkins, aged seven months, a son of the above, died at the Battery barracks, on the 4th instant, of the same disease.

Another case made its appearance, on the 2d instant, at 115 Mulberry Street, in a five-story, double tenement house, through the centre of which runs a hall four feet wide. The rooms measure fifteen feet by eleven, and the bed rooms attached, each about eleven by seven, with one small window apiece. These windows, on the side of the house adjoining No. 113, open into a recess seven feet by two feet, which exists between the two houses. "This recess," to quote the language in full of Dr. Southack, from whose report we have condensed the above description of the premises, "is in a most filthy condition. Slops and offal from both 113 and 115 are freely thrown there, and the inhabitants bitterly complain of the odour arising therefrom. The lower windows on the side adjoining 117 Mulberry also open into a recess between the two houses. This is also in a vile condition; so much so that the inhabitants in some of the rooms have nailed up the windows permanently to escape the stench."

Add to this the custom borrowed from untutored animals confessedly low in the scale, of depositing feces in the halls, and the picture of this haunt of the lowly may be pronounced complete.

Thus the patient, Kate Dooley, aged 35 years, who had been whitewashing on the 1st throughout the entire day, after a repast upon some bread and meat at 3 P. M., was surrounded by the very influences to invite the vomiting and purging which seized her the next day at 2 o'clock A. M. She, however, rapidly recovered.

Efficient sanitary measures have been adopted to arrest the spread of the disease, which, in these instances at least, is not traceable to any violations of quarantine laws.—*Medical Record*, May 15, 1866.

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Cholera in Germany.—A letter from the Grand Duchy of Luxembourg says: "The greatest alarm prevails throughout this district, owing to the dreadful ravages made by cholera at Diekisch and the surrounding villages. Between the first and the third the deaths amounted to 100 out of a population of only 2000 souls. All the means hitherto employed to arrest the progress of the epidemic have been in vain. To purify the air large fires have been made in the street, and the houses inundated with chloride of lime, but without effect. All who can are leaving the place. The disease made its first appearance at Clemenci, near Arlon, to which village, according to report, it was brought by a workman from Paris. It soon spread to Mamer, Erich, Dommeldange, Weimerskirch, Luxembourg, and Diekirch apparently following the water-courses.—*Brit. Med. Journ.*, April 14, 1866.

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Quarantine and Cholera.—The tendency of professional men in this country [England] to repose less and less faith, or altogether to disbelieve in the efficaciousness of quarantine as a defence against cholera has been rudely shaken by the circumstances attending the diffusion of the disease since the beginning of 1865. In some instances the pestilence is known to have been taken on board ship at Alexandria, to have been carried in an active state over hundreds or thousands of miles of sea-route, to have been landed in a seaport town in another country, and there to have assumed a formidable and most fatal development. In other instances the outbreak of the malady in coast towns of Europe has been preceded by events which could leave little doubt that the disease had been imported amongst their population in a like manner and from the same source. Finally, the whole history of the progress of the epidemic, from its point of origin to its extremest limits of dispersion, indicated the dissemination of the disease from Alexandria to the shores of the continent in the first place, and its subsequent extension from the centres of infection thus set up.

The appearance of the malady at Southampton last autumn, and the recent importation of cases into this country from Rotterdam, as well as transmission of the cholera poison across the country to receive a deadly development out at sea and in the ports of the New World, have seemingly clinched the lesson taught by the previous progress of the epidemic, and awakened a serious doubt of the wisdom of that want of faith in quarantine which has grown among us.

If quarantine were an abstract question, it might well be believed, in face of the present epidemic of cholera, that preventive medicine in this country had overreached itself and fallen disgracefully. But quarantine is a practical subject, and it must be

judged entirely by its results. Now these, in the recent diffusion of cholera, differ in nowise from the results observed in previous migratory epidemics of the disease. Quarantine, as practised in the Mediterranean and the Black Sea, has not offered any impediment to the spread of the epidemic. It has proved almost solely, as in previous outbreaks, a means of official exaction and commercial loss. The asserted exemption of Sicily and Greece from the epidemic is unfortunately of little value. There is no trustworthy evidence to show that the exemption arose from the stringent quarantine maintained against infected ports. Cases of cholera are known to have been brought into Greek and Sicilian waters, and not to have spread beyond the lazarets. But cases of cholera are equally known to have been imported into sundry coast towns and well-populated districts elsewhere irrespective of quarantine (Trieste, for example), and the disease has not extended. The one series of facts must be read with the other.

In 1859, when cholera prevailed widely in Western Europe, numerous cases of the disease were imported into our eastern seaports. There were also slight local outbreaks at Wick, in Caithness, and Glass Houghton, in Yorkshire, but the malady did not spread, although no quarantine was maintained.

An attentive study of the diffusion of the present as of previous epidemics shows that the difficulties in the way of excluding the disease from a country are, for the time being at least, insuperable. This is proved in a remarkable manner by the circumstances attending the outbreak of the disease on board the emigrant ships *England* and *Virginia*, and the case imported into Bristol a fortnight ago. The first news of the appearance of cholera in Rotterdam reached England on the 22d ult. On the same day a sailor landed in London (probably from the steamer bringing the news), who, in the course of the day, while journeying to Bristol, was struck down with the disease. He died the next morning. Three weeks before, a body of emigrants, coming from Holland by way of Rotterdam, had traversed the kingdom from Hull to Liverpool. They were laden with cholera-poison, as their subsequent history on board the ship *England* clearly shows. Other emigrants also followed, burdened with the infection. In fact, a stream of cholera carriers had poured into this country before the least suspicion existed here, or even in Rotterdam itself, that the disease was being developed, and on the eve of breaking out in Holland.

In like manner the diffusion of cholera from Alexandria to Europe, last year, had taken place, and the disease had effected a lodgment on the shores of the continent before it was known to exist in Egypt, or contemporaneously with the first news of its appearance there.

It seems impossible to devise any trustworthy measures by which such insidious but all-important migrations of the epidemic could be successfully met. Practically our efforts must be limited to the prevention of a multiplication of foci of infection by the importation of cases from without.—*Lancet*, May 12, 1866.

MEDICAL NEWS.

DOMESTIC INTELLIGENCE.

American Medical Association. Abstract of the Proceedings at its Seventeenth Annual Session held in the City of Baltimore on the 1st, 2d, 3d, and 4th of May, 1866.—The Association convened at Concordia Hall in the city of Baltimore on the first of May; the President, Dr. D. Humphreys Storer, in the chair.

Dr. C. C. Cox, on behalf of the Committee of Arrangements, gave a warm welcome to the Association in a neat address. Dr. Cox then offered several documents exculpating Dr. M. A. Pallen, of Missouri, from charges brought against him at the meeting in Boston and for which he had then been hastily expelled. These documents were referred to the Committee on Medical Ethics, who subsequently reported as follows, which report was adopted:—

The committee to whom were referred the papers in relation to the expulsion of Dr. Montrose A. Pallen at the meeting of the Association in Boston, respectfully report:—

That they have examined the documents and evidence referred to the committee, embracing papers indorsed by Gen. U. S. Grant, the Vice Consul of the United States at Montreal, and many citizens of Missouri, and are fully satisfied that the statements on which his expulsion was based were entirely unfounded; and, therefore, regretting the injustice done, both to

Dr. Pallen and the Association, we recommend the following resolution:—

"*Resolved*, That the preamble and resolution adopted by the Association at its annual meeting in Boston, June, 1865, expelling Dr. Pallen, be hereby rescinded; and that Dr. Montrose A. Pallen be restored to his previous membership in the Association."

The President, Dr. Storer, delivered the annual address, the subject of which was Specialities in Medicine. It was an exceedingly able one, and commanded the most respectful attention. The thanks of the Association were tendered to him therefor, and a copy requested for publication.

The following standing committees presented their reports, which where disposed of as follows:—

On Quarantine—Dr. W. Jewell, of Pennsylvania, chairman, reported progress and was continued.

On So-called Spotted Fever—Dr. J. J. Levick, of Pennsylvania, chairman, presented a report which was referred to the Section on Practical Medicine and Obstetrics.

On Tracheotomy in Membranous Croup—Dr. A. N. Dougherty, of New Jersey, chairman, the subject was referred to the Section on Surgery.

On Rank of Medical Corps in U. S. Army—On motion of Dr. Cox the subject was referred for discussion to the Association in general session.

On Alcohol and its Relations to Man—Dr. G. E. Morgan, of Maryland, chairman, presented a report which was referred to the Section on Hygiene.

On Progress of Medical Science—Dr. J. C. Smith, of New York, chairman, reported progress, and was continued.

On Diphtheria—Dr. H. D. Holton, of Vermont, chairman, made a report which was referred to the Section on Practical Medicine.

On Comparative Value of Life in City and Country—Dr. E. Jarvis, of Massachusetts, chairman, reported progress and was continued.

On Drainage and Sewerage of Cities—Dr. W. Jewell, of Pennsylvania, Chairman, reported progress and was continued.

On Disinfectants—Dr. E. M. Hunt, of New Jersey, presented a report which was referred to Section on Hygiene.

On Compulsory Vaccination—Dr. A. N. Bell, of New York, Chairman, reported progress and the subject was referred to the Section on Hygiene.

On Causes and Pathology of Pyæmia—Dr. J. J. Woodward, U. S. A., Chairman, presented a report which was referred to the Section on Surgery.

On Use of Plaster of Paris in Surgery—Dr. J. L. Little, of New York, Chairman, reported progress and was continued.

On the Etiological and Pathological Relations of Epidemic Erysipelas, Spotted Fever, Diphtheria, and Scarlatina—Dr. N. S. Davis, of Illinois, Chairman, presented a report which was referred to the Section on Meteorology, etc.

The committees on Ligature of Subclavian Artery—on Milk Sickness—on the Relation which the Doctrine of Correlation and Conservation of Forces bears to the Physiological and Pathological Condition of the Human System—On the Effect of Civilization on the Duration of Human Life—on Strangulated Hernia—on Meteorology, Medical Topography, and Epidemics failed to report.

The report of Dr. S. Littell, of Pennsylvania, on the Relations which Electricity Sustains to the Causes of Disease presented at the last meeting was referred to the Section on Hygiene.

The following voluntary communications were presented and disposed of as follows:—

On Luxation of the Hip-Joint—By Dr. L. A. Sayres, of New York, referred to the Section on Surgery.

On Extirpation of the Uterus, and also one on the Clamp Shield, an instrument designed to lessen the danger of extirpation of the uterus by abdominal section—By Dr. H. R. Storer, of Massachusetts, referred to the Section on Surgery.

On Impurities in Water Pipes—By Dr. J. C. Draper, of New York, referred to the Section on Hygiene.

On Permanganate of Potassa as a Purifier—By Dr. Craige, D. C., referred to the Section on Hygiene.

On a New Apparatus for Fractured Patellæ—By Dr. J. M. Boisnot, of Pennsylvania, referred to the Section on Surgery.

On Local Anæsthesia, and one on Paralysis of the Vocal Cords and Aphonia—By Dr. J. S. Cohen, of Pennsylvania, which were referred to the Section on Practical Medicine.

On Aluminium in Dentistry—By Dr. A. Mason, of Massachusetts, referred to Section on Chemistry.

On Extirpation of Lower Jaw—By Dr. W. C. Enos, of New York, referred to Section on Surgery.

On Lithotomy—By Dr. J. C. Hughes, of Iowa, referred to Section on Surgery.

On Periosteal Flap Amputations—By Dr. McGee; and one on Diagnosis of Diseases of the Larynx—By Dr. Elsberg, of New York, both referred to the Section on Surgery.

The reports of the Committee on Publication and of the Treasurer were read and accepted.

On motion of Dr. W. Hooker, of Connecticut, it was unanimously

Resolved, That no report, or other paper, shall be presented to this Association, unless it be so prepared that it can be put at once into the hands of the Permanent Secretary, to be transmitted to the Committee of Publication.

Dr. C. A. Lee, of New York, presented the report of the Standing Committee on Medical Literature.

Dr. Brown-Séquard gave a lecture on the Treatment of Functional and Organic Diseases of the Nerves, and the thanks of the Association were presented to him for his interesting, able, and eminently practical lecture, and he was requested to furnish an abstract for publication.

In accordance with the report of the Committee on Prize Essays, the first prize was awarded to Drs. W. F. Thoms, of New York, for his Essay on Health in Cities, and the second prize to Dr. S. R. Percy, of New York, for his essay on Digitaline.

The committee reported that they had also received a valuable paper on *Angular Curvature of the Spine*, the author of which through an inadvertent violation of the rules had lost the right of competing for the prize; the committee, however, laid the paper before the Association, and recommended its reference to the Section on Surgery to determine the propriety of its publication, which recommendation was adopted.

On motion of Dr. Taylor, of Iowa, a resolution was adopted for the appointment by the President of the Association of a committee consisting of one member from each State to memorialize Congress for an appropriation to publish the reports and documents of the Surgeon-General of the United States.

Appropriate resolutions were adopted expressive of the profound regret felt by the Association at the loss which they had sustained in the death of their associates, Drs. James A. Couper, of Delaware, Joseph Mather Smith, M. D., of New York, and Prof. D. L. McGugin, of Iowa.

Dr. Mayburry, of Pennsylvania, on behalf of the Montgomery County Medical Society, of the State of Pennsylvania, presented a preamble and resolutions expressive of regret that some of the professors in medical colleges in their State have kept aloof from county medical societies, and expressing their opposition to any college being represented by a professor who is not a member of a county society, which was referred to the committee on Medical Ethics, who subsequently reported recommending a reference of the whole matter to the medical society of the State, which was adopted.

Dr. Worthington Hooker, of New Haven, on behalf of a majority of the Committee on Medical Ethics presented an extremely able, highly interesting, and high toned report on the subject of Specialities in Medicine. A minority report signed by Dr. H. J. Bowditch was also presented. Both were referred to the Committee on Publication.

Dr. Marsden, of Quebec, made a lengthy communication on Cholera, in which he stated his belief in the communicability of the disease and the efficiency of a rigid quarantine in preventing its propagation. This communication gave rise to a considerable discussion, but the Association refused to commit itself as a body to any expression of opinion on the subject.

The Committee on Nominations reported the following officers and committees for 1866-67, which report was accepted:—

President—H. F. Askew, Delaware.

Vice-Presidents—W. K. Bowling, Tennessee; J. C. Hughes, Iowa; H. J. Bowditch, Massachusetts; Thos. C. Brinsmade, New York.

Permanent Secretary—William B. Atkinson, Pennsylvania.

Treasurer—Caspar Wister, Pennsylvania.

Assistant Secretary—W. W. Dawson, Cincinnati.

Committee of Arrangements—Drs. John

A. Murphy, James Graham, R. R. McIlvaine, J. P. Walker Unsicker, William T. Brown, William B. Done, Cincinnati.

Committee on Medical Education—Drs S. D. Gross, D F. Condie, John Bell, H. J. Bigelow, Charles A. Pope.

Committee on Prize Essays—Drs. Francis Donelson, Maryland; J. Simpson, U. S. A.; C. C. Cox, E. Warren, H. C. Van Bibber.

Committee on Publication—Drs. F. G Smith, H. F. Askew, Wm. Mayburry, W. B. Atkinson, H. R. Storer, Caspar Wister

Committee on Medical Literature—Drs. A. C. Post, Jas. Anderson, H. D. Noyes, T. G. Thomas, Stephen Smith, all of New York.

Committee on Americon Medical Necrology—Dr. Wood, Delaware; Jno. L. Callender, of Penn ; Jno. Blaine, New Jersey ; R. D. Arnold, Georgia; A. Lopez, Alabama; G. Dowell, Texas.

Committee on Climatology—Drs. C. W. Parsons, Rhode Island ; P. A. Stackfold, N. H Thomas, W. Logan, Cal.; R. C. Hamill, Ill.; J. C. Weston, Me.; P. H. Coltin, Conn.; H. Jones, W. Thomas Antiselle, D. C.; J. W. H. Bake, Iowa; A. Sayer, Mich.; O. S. Mahon, Md.; J. W. Russell. Ohio; D. F. Condie, Penn.; Howard Townsend, N. Y.; U. Harris, Georgia; G. Engleman, Missouri; R. Miller, Alabama; E. D. Fenner, Louisiana; G. Dowell, Texas.

The committee also reported in favour of the next meeting of the Association being held in Cincinnati, Ohio, on first Tuesday in May, 1867, which was adopted.

The following resolution was adopted:—

"*Resolved*, That the Association most earnestly request the medical colleges of the country to hold a convention for thoroughly revising the whole system of medical college instruction for the purpose of establishing more uniformity of time, and a more systematic course of instruction for the whole."

The following committee were appointed to carry out this resolution: Drs. N. S. Davis, Ill.; W. Hooker, Conn.; Geo. C. Shattuck, Mass.; M. B. Wright, Ohio; and S. D. Gross, Penn.

Dr. C. C. Cox presented a report on Rank in the Army, which was referred to the Committee on Publication, and then offered the following resolution, which was adopted:—

"*Resolved*, That the President of this Association bring before the notice of the military committees of both houses of Congress, at as early a period as possible, the present status of medical men in the military service of the United States, and urge upon them that in the army medical bills, under consideration of Congress, the interests of the medical profession shall be so regarded that the medical staff in the service shall, numerically considered, receive the same rank and command as officers in other staffs of the army are justly entitled to."

A committee was appointed on Fractures of the Spine, Dr. Brown-Séquard, Chairman.

On motion of Dr. Garrish, of New York, it was

"*Resolved*, That all the members of this Association urge upon the legislatures of the various States the great importance of making it compulsory that all marriages, births, and deaths be registered."

On motion of Dr. H. R. Storer, of Massachusetts, it was

Resolved, That the Association recommend to the several medical and law schools of the country the establishment of an independent chair of medical jurisprudence, to be filled, if possible, by teachers who have studied both law and medicine, attendance upon one full course of lectures from whom shall be deemed necessary before the medical degree is conferred.

Resolved, That while the Association regrets that the Association of the Superintendents of American Asylums for the Insane has not yet thought fit to unite itself more closely with the representative body of American physicians, it still is of opinion that such union is for their mutual and reciprocal advantage, and that it ought to be effected without further delay.

The constitution was amended so as to increase the annual assessment of members from three to five dollars.

After the adoption of a vote of thanks for the hospitality and courtesy with which they had been entertained in Baltimore, the Association adjourned.

The meeting is said to have been a very interesting one, largely attended, nearly 350 members being present, and the proceedings were of a very instructive character.

In a social point of view the meeting was also highly agreeable. During the evening

of the first day of the meeting a concert was given to the members of the Association by the Committee of Arrangements at Concordia Hall. The second evening was spent at soirees at the residences of some of the members of the profession. On the third evening the members were entertained with a banquet by the corporate authorities of the city at which entertainment were present the principal notabilities of the city. On the last day the Association made an excursion to Annapolis by special invitation of his excellency the Hon. Thomas Swann, Esq , Governor, who gave them a cordial reception and a sumptuous entertainment.

—

Convention of Representatives of Medical Colleges of the West.—A meeting of delegates from the Medical Colleges of the West, for the purpose of agreeing upon a more uniform rate of lecture fees, was held in Cincinnati, on the 24th of April last. Prof. N. S. Davis, of Chicago, was appointed chairman, and Prof. G. C. G. Weber, of Cleveland, secretary. After a free interchange of views, the following preamble and resolutions were unanimously adopted:

Whereas, the cause of medical education requires the establishment and maintenance of permanent colleges, with all the necessary means for illustration and practical instruction, as well as competent teachers, thereby involving a large annual expenditure of money, therefore,

1st. *Resolved*, That a reasonable demand for lecture fees is required by the best interests both of the colleges and those who patronize them.

2d. *Resolved*, That competition among Medical Colleges, to be beneficial to the profession and the cause of medical science, should be based *entirely* on the ability of those engaged as teachers, and the completeness of their curriculum, with the facilities for practical demonstrations accompanying it, and not on *mere pecuniary* differences in the cost of attendance; and, hence, the fees charged in all the Medical Colleges, in a given section of country, should be uniform, or so near uniform that the actual cost of attendance in the different colleges shall be practically equal.

3d. *Resolved*, That inasmuch as only a limited number of students can be properly accommodated or educated in any one college each year, any State which, with enlightened liberality, should so endow the medical department of its State University as to make education therein free, ought to so far regard the interests of the institutions of other States, as to limit the freedom of its instruction to the citizens of its own State.

4th. *Resolved*, That in the opinion of the college faculties here represented, the aggregate annual fees for instruction in each college should be not less than $105 for each student.

5th. *Resolved*, That a committee of three be appointed to communicate the foregoing views to the faculties of the several medical colleges not here represented, and also to the Regents of the University of Michigan, with a view to the ultimate removal of such obstacles, legal or otherwise, as may be in the way of the voluntary adoption of the sum named in the fourth resolution, or some other sum near it, as a uniform standard of college fees; and to take such measures as they may deem necessary, and report to a future convention called for that purpose.

6th. *Resolved*, That the colleges here represented would, in the opinion of the delegates present, be willing to lengthen their annual lecture terms to six months, if, by so doing, practical uniformity in the standard of fees could be fully secured.

—

Galveston Medical College. Soule University.—The class in this school during the session 1865–6, numbered 31, and at the commencement, April 4, 1866, the degree of M. D. was conferred on 4 candidates.

—

Preston Retreat.—The late Dr. Jonas Preston, appropriated by will the larger portion of a valuable estate to the founding of an hospital, in which INDIGENT MARRIED WOMEN OF GOOD MORAL CHARACTER, residents of the City and County of Philadelphia, and County of Delaware in Pennsylvania, could be provided with suitable attendance and comfort during the period of their confinement.

From a sudden fall in the value of the investments, after the hospital building was erected, it was found that there were not sufficient funds to maintain the institution. We are happy to learn that the income of the estate is now sufficient to provide for as many patients as can be accommodated in the large building of the Retreat, and that the Managers have made all arrangements for opening

the house; and patients are now occupying some of the wards.

Application for admission should be made to Dr. Wm. Goodell, Physician in charge, at the Retreat, Hamilton Street between Twentieth and Twenty-first Streets, who can furnish all information in regard to regulations for admission, &c.

—

Smallpox among the Refugees and Freedmen at Charleston.—We have been favoured with the following report of cases of smallpox treated at the Smallpox Hospital for Refugees and Freedmen, at Charleston, from January 1, 1866, to May 1, 1866.

	Total.	Mild cases.	Confluent cases.	Deaths.
Number of patients treated in this hospital since January 1, 1866, of whom it is not known whether they were vaccinated or not	68	46	22	15
Number of patients known to have been vaccinated successfully prior to the attack	256	174	82	21
Number of patients known not to have been successfully vaccinated prior to the attack	194	29	165	72
Number of cases of second attack of smallpox	4	2	2	1
Total number of cases treated since January 1, 1866, to May 1, 1866	522	251	271	109

No. cases occurring from—				
1 to 5 yrs after vaccination	106	82	24	9
5 " 10 " " "	38	33	5	
10 " 15 " " "	12	6	6	
15 " 20 " " "	46	24	22	4
20 " 25 " " "	19	14	5	1
25 " 30 " " "	22	10	12	6
30 " 35 " " "	2	1	1	
35 " 40 " " "	1		1	
40 " 45 " " "	1		1	
45 " 50 " " "	1	1		
50 " 55 " " "				
55 " 60 " " "	1	1		

Respectfully submitted,
(Signed). S. C. BROWN, M. D.,
City Physician, in charge of Smallpox Hospital.

GEORGE S. PELZER,
A. A. Surgeon U. S. Army,
In charge of Health Department, Charleston, S. C.

—

Health of Philadelphia.—Previously to every epidemic of cholera which has prevailed in this city an epidemic constitution of the atmosphere has always manifested itself in an increase of deaths from bowel affections. No such condition of things seems to exist at the present moment. The whole number of deaths from cholera infantum, diarrhœa, and dysentery, for the week ending May 26, was only six, in a mortality from all diseases of 238.

—

Death from Chloroform.—An instance of this has lately occurred in the southern part of the city of Philadelphia. It appears from the evidence at the inquest that the chloroform was given at the request of the patient to produce anæsthesia during the extraction of a tooth, she stating that she had previously taken it without injurious effects. In a minute or two after inhaling the vapour she turned deadly pale, went into convulsions, and soon died. The chloroform seems to have been pure, as the dentist testified that he had given a larger inhalation of the same to a child on the same day. On *post-mortem* examination all the organs were found perfectly healthy.

—

OBITUARY RECORD.—It is with deep regret that we have to record the death of Prof. JOSEPH MATHER SMITH, which took place in New York on the 22d of April last in the 78th year of his age. Dr. Smith was a most eminent and sound practitioner, admirable teacher, and a high-minded and honourable gentleman.

—— In New Orleans, April 2d, 1863, ANTHONY PENISTON, M. D., late Professor of Anatomy in the New Orleans School of Medicine.

—— In New Orleans, December 2, 1863, THOMAS PENISTON, M. D., late Emeritus Professor of Clinical Medicine in New Orleans School of Medicine.

—— In New Orleans, April, 1866, E. D. FENNER, M. D., one of the editors of the *Southern Journal of the Medical Sciences*, and well known to the Profession throughout the United States by his numerous valuable literary contributions to medical science.

—— At Charleston, S. C., on the 7th of May, 1866, HENRY R. FROST, M. D., Professor of Materia Medica in the Medical College of South Carolina.

—— In Philadelphia, May 11, 1866, in the 35th year of his age, CHARLES PENDLETON TUTT, M. D., one of the consulting physicians of the Philadelphia Hospital.

At a meeting of the Medical Board of the Philadelphia Hospital, the following resolutions were unanimously adopted:—

Resolved, that the Medical Board have heard with feelings of profound sorrow, of the death of our colleague Dr. Chas. P. Tutt, from disease contracted in the wards of the hospital.

Resolved, that in Dr. Tutt we always found the polite gentleman, the agreeable associate, the zealous student, and the attentive and skilful practitioner of medicine, always at his post of duty, despite its dangers and responsibilities.

Resolved, that the Medical Board tender individually and collectively to the family of Dr. Tutt our deepest sympathy in their affliction, and assure them that we will always cherish the memory of our deceased associate with heartfelt gratification.

Resolved, that a copy of the above resolutions be transmitted to the family of Dr. Tutt, the Board of Guardians, and that they be published in the medical journals of our city, duly attested by the President of the Medical Board. ALFRED STILLÉ,
President of the Medical Board.

FOREIGN INTELLIGENCE.

Richardson's Method of Producing Local Anæsthesia.—In our last number, page 77, we mentioned that Cæsarean section had been painlessly performed under the influence of local anæsthesia by Dr. Richardson's method. We now learn that the patient has entirely recovered, and during her convalescence did not suffer from a single untoward symptom. Mr. Spencer Wells and Mr. Braddon have each operated for ovariotomy, local anæsthesia being induced by Dr. Richardson's method In the latter case it turned out on removing the cyst that the adhesions to the intestines were firm and extensive, so that the operation was tedious and difficult. But wherever the knife had to go the ether spray was directed, and from the first to the last the pain experienced and expressed was almost *nil*. This anæsthetic method has also been successfully used by Dr. Thorburn for the operation for femoral hernia The patient made a good recovery.—*Med. Times and Gaz.*, April 28, 1866.

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Dr. Richardson's New Method of Applying Caustic and Styptics to Raw Surfaces — Dr. RICHARDSON has lately described a new method of applying caustics and styptics to raw surfaces, in conjunction with the ether spray. He mentions two hæmostatic ethers, one prepared by dissolving tannin in absolute ether and afterwards treating it with xyloidine; this he terms the xylostyptic ether. The other is prepared by dissolving perchloride of iron in ether; this is termed the ferro-styptic ether. He has also invented a caustic ether, by the combination of hydrofluoric acid with the ether. An ozonized ether, when injected into an apartment in the form of spray, renders the atmosphere pure, and the presence of the ozone can be demonstrated by Schonbein's test papers.

—

Amputation at the Hip-Joint.—Three successful cases of amputation at the hip-joint, in London hospitals, are reported at the same time by Mr. Erichsen, Mr. Holmes, and Mr. H. Lea.

—

Influenza in London.—It is stated in a late No. (May 12) of the *Medical Times and Gazette* that "influenza is very prevalent in London at present, and is one of many other signs that forebode a probable invasion of cholera. The symptoms we have noticed are shivering and malaise, followed by dry heat of skin (but in one or two cases in which the thermometer was used it did not indicate any abnormal rise of temperature), great sneezing and defluxion, tickling cough, and muscular pains. Children seem to be greater sufferers than adults. The old-fashioned stimulating diaphoretic, composed of liq. am. acet. and nitrous ether, with conium for the cough and plenty of nourishment, seem to have been successful remedies, and the epidemic has been extensive rather than severe.

—

The Coming Summer.—Dr. Hjaltalin states that in Norway the mean temperature has been five degrees below the usual mean of winter, this must necessarily be followed by a tremendous ice drift. The Atlantic will receive the drifting in blocks which will melt, and Dr. H. predicts will be the occasion of much rain and hail accompanied by a fall of the mean temperature of the coming summer.—*Med. Times and Gaz.*, May 1, 1866.

—

OBITUARY RECORD.—Died, in London, April, 1866, of suppurative inflammation of the kidneys, aged 72, BENJAMIN GUY BABINGTON, M. D., F. R.S., Physician to Guy's Hospital, the founder of the Epidemiological Society, and for several years its President.

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CHOLERA.

Cholera.—The views of Prof. Geo. Johnson, in regard to cholera, are entitled to a respectful consideration, not only from the great ingenuity with which they are enforced, and the learning and high position of the writer, but also because they have been accepted as correct by a number of eminent practitioners. In our last number we ventured to point out some facts which appeared to us to be irreconcilable with his doctrines, and we shall now endeavour to indicate some others, which seem to us inexplicable by his hypothesis.

Prof. Johnson's views are based upon three propositions, viz: 1st. That cholera is produced by a poison which enters into the blood. 2d. That this poison acts first on the capillary arteries of the lungs, causing a spasm in them which prevents the blood from reaching these organs. 3d. That the discharges from the bowels are the result of an effort of nature to eliminate the poison; and lastly, he concludes that the proper treatment of the disease consists in aiding nature in her efforts.

Each of the above propositions appears to us to be purely hypothetical, and the legitimate deduction from his premises eminently dangerous.

We will examine these propositions in detail.

1st. *As regards the existence of a poison in the blood.*—The existence of such poison has never been demonstrated, and without denying that such a poison *may* be a reality, it must be conceded that there are some facts in the history of the disease not easily explicable by such an hypothesis.

The prevalence of the disease in any one locality as an epidemic has, generally, a limited duration—usually about from four to six weeks—it has its regular period of increase, climax, and decline. The first cases are the most malignant, and after the disease has reached its climax it then decreases in violence and ceases. Now, were

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the cholera propagated by a poison, and especially were this poison the product of the dejections, as it is, in some way, usually believed to be, does it not seem strange that at the commencement of an epidemic when there is less of this poison generated the disease should be most violent and its victims most numerous; and at its climax when there is most of this poison produced, that the disease should then decrease and gradually cease?

The only attempt to explain this is by the supposition that the disease ceases because there are no more subjects susceptible to the influence of the poison. This is an endeavour to sustain one hypothesis by another equally without foundation.

Dr. William Baly, in his elaborate report to the Royal College of Physicians, remarks:—

"Moreover, there are reasons for believing that the cessation of the disease in a town is *not* owing to all persons susceptible of it having already been exposed to its cause and affected by it. In the first place, the disease may cease in a town, or a large public institution, and then after a short interval be renewed—as many persons suffering from it, in this renewed outbreak, as in the former one. An example of this is met with in the case of Sunderland, where a slight attack, between the months of October, 1848, and January, 1849, was succeeded, after more than a month's complete interval, by a second attack of far greater severity; this again being followed, after two months' interval, by a third outbreak of a still more serious character. It is not likely that, in this instance, the disease ceased in the two earlier outbreaks, because all the persons still susceptible of the disease, through some strange concurrence of circumstances, failed to be exposed to the contagious influence." (p. 50.)

2d. *With regard to the spasm of the pulmonary capillaries.*—This is not susceptible of demonstrative proof, and all that Prof. Johnson can adduce in support of the hypothesis is what he calls the anæmic condition of the lungs, found after death. If the choleraic poison acted primarily on the pulmonary arteries it might be reasonably supposed that it would occasion some recognizable lesion. But Drs. Pennock and Gerhard, Foy, Gendrin, Bouillaud, Leudet, and indeed, nearly all observers represent the lungs as healthy. Dr. William Gull, in his admirable report to the Royal College of Physicians in treating of the post-mortem appearances of the lungs, states:—

"In the majority of cases fatal in the algide stage, no other morbid change existed than engorgement of the lower and posterior parts of the lungs with dark blood. In some instances this was so complete as to cause portions of the pulmonary tissue, to sink in water. The anterior and superior parts were drier than natural. In only one case reported to us was there any degree of œdema. In certain cases the *pulmonary tissue throughout was full of dark blood.*

"The bronchial tubes were normal in appearance, or their mucous membrane was congested. They contained a small amount of frothy serum, sometimes tinged with blood." (p. 38)

Leudet states: "The lungs were commonly healthy, in two instances there was pulmonary apoplexy; frequently hypostatic congestion," "bronchi congested."

The above facts are subversive of Prof. Johnson's hypothesis.

3d. *As regards the dejections being an effort of nature to eliminate a poison from the blood.*—This proposition is as purely hypothetical as the preceding ones. The existence of such a poison, either in the blood or in the dejections, has not been proven, and if it were it would not be giving much credit to nature for sagacity, in supposing that she resorted to so dangerous a means of getting rid of this poison as by excessive vomiting and purging, whereby the blood is deprived of its nutritive materials and its most important anatomical element — water — leaving the remaining portion of the sanguineous fluid utterly unfit for the purposes of life.

Even admitting the existence of a poison in the blood, it is by no means certain that it is possible to eliminate it by purgatives or by any effort of nature.

Dr. C. Handfield Jones, in a recent article (*British Medical Journal*, May 5, 1866), remarks: "The analogy of most other diseases of a toxic kind would lead us to think that the morbific action is to be counteracted rather by endeavours to prevent its morbid effects, or to strengthen and hold up the vital forces against it, than by any process of elimination. Thus we deal best with malarious disorders, continued fevers, influenza, erysipelas, snake-bite, and most cases of the exanthemata. In fact, except

perhaps in the cases of saturnine and uræmic intoxication, I doubt whether we have any power whatever to procure the separation of a poison from the system. How obstinately the syphilitic clings to its victim!"

All clinical experience is equally opposed to this doctrine. Our own observation in two epidemics and that we believe of all practitioners, shows that in the early stages of cholera no more fatal course can be persued than the administration of active cathartics, and especially such as are most eminently evacuant, as those belonging to the saline and hydragogue class. They precipitate the patient speedily into collapse. A large dose of croton oil will bring on phenomena hardly distinguishable from those of cholera.

Dr. Goodeve, in a recent article on epidemic cholera in Reynold's *System of Medicine*, enumerates among the causes of cholera the noxious effects of purgative medicines. He says "numerous Indian writers recognize the mischief produced by these. I believe that this is not confined to the saline and hydragogue purgatives only. I have seen milder purgatives followed by cholera."

The most judicious and experienced practitioners of the present day recommend that the diarrhœa be arrested as early as possible—except where the bowels are filled with undigested matter, when a very mild laxative may be premised—by perfect rest, opiates, volatile and diffusible stimulants in moderate doses, mild diet, as beef tea, arrowroot, etc., and small portions of ice or cold water.

Prof. Johnson, in a reply to Dr. Jones' article, published in the *British Medical Journal* for 12th May, which came to hand after this article was in type, makes an admission which is virtually an abandonment of his doctrine of elimination, though of course he does not so intend it. Thus he says:—

"It is an indisputable fact, that a large proportion of cases of choleraic diarrhœa will terminate in recovery under the use of the simplest possible remedies which are wholly free from astringent properties. Thus the late Mr. Wakefield, who was surgeon to the Middlesex House of Correction during the last epidemic of cholera in 1854, stated in a letter to the *Times*, that he had treated upwards of 150 cases of choleraic diarrhœa amongst the prisoners by thirty grains of sesquicarbonate of soda in a wineglassful of strong mint tea. The dose was repeated every half hour. No fatal case occurred. 'The disease was arrested with a rapidity that was quite magical,' and he had rarely occasion to administer the dose more than three times before the sickness and *diarrhœa was arrested*. While under treatment, the patient was confined to a diet of beef-tea, cocoa, or arrowroot; nothing solid, not even bread, being allowed while the diarrhœa continued. Now, this plan of treatment, which was remarkably well suited for allowing full play to the curative efforts of nature, can scarcely be supposed to have had any direct remedial effect, and it was certainly not an astringent treatment; yet the results were in the highest degree satisfactory."

Now this treatment of Mr. Wakefield's cannot be claimed to have been an eliminative one, and surely did not promote evacuations from the bowels, but was calculated to, and *did check them*. If then this treatment is highly satisfactory to Prof. Johnson, it certainly is so to us, and perfectly harmonizes with the views we have been endeavouring to inculcate.

In our next number we shall endeavour to show that it is upon the mucous membrane of the intestinal tube that the cause of cholera exerts its principal force—that it is there the most constant and greatest pathological changes are found—and that from the excessive secretion from that membrane which deprives the sanguineous fluid of its nutritive materials and most important anatomical element, is due the other prominent phenomena of the disease.

While we greatly distrust the assertion that patients have died of cholera, without having had any evacuation, and that death therefore cannot have been caused by the changes in the blood resulting from the dejections; we are not disposed to deny that the abdominal ganglionic and spinal nervous systems may be simultaneously affected. It is true that we have no conclusive pathological proofs of this—unless the muscular spasms, movements of the muscles after death, and unusually early occurrence of rigor mortis be accepted as such—but there are some clinical facts which lend it support. The writer of this suffered from an attack of cholera in 1832, which though it was arrested before profound collapse resulted, his nervous system was so profoundly affected

that it was not until after several months that its tone was restored.

—

Non-contagiousness of Cholera —We invite attention to the following extract from the very sensible and admirable lectures on cholera by Prof. A. Clark, lately published in the *Medical Record*, and which appear to us to be conclusive as to the non-contagiousness of cholera.

After quoting some of the strongest facts adduced in support of the belief in the contagiousness of cholera he observes:—

"Such are the facts and cases that are cited in support of the theory of contagion Now, on the other hand, I will give you some statements and reports that seem to be altogether incompatible with the idea that the disease is communicable by personal contagion.

"It will occur to your own reflections, that if cholera was contagious in Cumberland or in Columbia, it will be contagious everywhere. Typhus is contagious in dwellings and in hospitals, in village and town, in summer and in winter. If the term 'contingent contagion' means anything, it can only be used in relation to the state of the individual—his power to resist contagion. The contagious principle is always the same: contingency cannot be predicated of it; nor is it apposite to say that one affirmative fact outweighs scores of negative ones, for the facts in this case are the occurrences of cholera as described. These are not doubted. The question at issue is, will these occurrences admit of any other explanation than the supposed contagion? If, then, it can be shown that in the broad study of the disease it is not spread directly by emanations from the sick, then the occurrences at Cumberland must have some other explanation, whether we have knowledge enough to make that explanation or not.

"Dr. Morris states that in the Massachusetts State Prison, at midnight, July 27th, 1854, he was called to see a coloured convict suffering from a choleraic attack. *He had been in solitary confinement for seven years* Before Dr. Morris could get to bed again, he was called to four other prisoners, who had been attacked in different parts of the prison. During the next day, the succeeding night, and the following day, the cases multiplied; so that, in forty-eight hours, two hundred and five were more or less severely affected. The symptoms, Dr Morris says, were 'lividity of the lips, painful cramps, vomiting and purging, cold extremities, and in a few instances suppression of the urine.' On the 27th of July, the day had been very hot, and by a sudden change the night was very cold.

"A man who had been confined seven years in his cell, having no communication even with the prisoners in the institution, is the first to be seized. Suspicion was aroused that the food might be poisonous, but on examination it was found good and wholesome.

"Dr. Trask gives the following account of the outbreak of cholera in the Westchester Poor-House, in 1849:—

"'Up to this time [the time of the outbreak], there had been no case of cholera, so far as I can learn, between this place [White Plains] and New York [twenty-eight miles], nor was there any evidence of its introduction from that city.'

"Suddenly, two men sleeping in beds almost adjoining, were seized with cramps, vomiting, and diarrhœa, after midnight, and before noon, both were dead. On the same day a female at the opposite end of the establishment was similarly attacked, and died in twenty-four hours. There were forty-seven cases, and twenty-seven deaths, among about one hundred and fifty inmates. He soon learned that diarrhœa had been prevailing in the establishment, and that most, if not all of those suddenly attacked had had this affection for some time.

"Parallel instances could be multiplied indefinitely. The whole history of cholera seems to look to another cause than contagion for its origin. As it began in European towns, it was almost always preceded by diarrhœa and colicky pains, and occasionally by cholera-morbus; and when at length it made its appearance, it often seized upon some person or persons who had not been out of town for a long time, between whom and infected places no connection could be traced, living in a very unhealthy locality; and at very nearly the same time other persons were seized in similar negative relations to the outside disease, and who had had no communication with the person first attacked.

"The settlement of the question can be somewhat aided by considering the history of hospitals, and the liability of nurses and physicians to the disease. Dr. Vanderveer gives an account of a little hospital of which he had charge in Franklin Street, in this

city, in 1854, where, it would seem, were assembled all the conditions necessary to give contagion force, if the disease is communicable in this way. He states that he had two wards, one above the other, the lower 25×35 feet, the upper, 25×30; that there were at times twenty five patients in each of them; that the physicians and nurses slept in small adjoining rooms opening into the wards, and that the doors of their rooms were constantly open for ventilation; that the back yard, 20×30, in closed by a wall twelve feet high, furnished room for the kitchen, water-closets autopsy room, wash-house; and a part of this space was reserved for the dead bodies, which were accumulated once to the number of ten, and till they became offensive. He says that the physicians made seventy-eight *post-mortem* examinations; that their hands, *bathed in the choleraic fluids, were often wounded;* that there were twenty physicians, nurses, and attendants, and that the only one of the twenty who had cholera or any symptoms of cholera, was a sedan-carrier of temperate habits, who resigned his place because his work was too hard, and five days after was brought to the hospital in a dying condition.

"Here is a little pent-up place with water-closet, dead-house, and the dead piled up in coffins and exposed to the heat and sun, and shut in by a wall twelve feet high; the place full, the wards crowded, and the physicians and attendants, in effect, sleeping in the wards, and yet no one takes the disease. Histories of hospitals which teach the same lesson, few, however so emphatically, could be accumulated in our own country. From the European hospitals the same story comes. They do not all announce complete exemption of the physicians and attendants; but without any exception, the mortality is declared to be moderate—not exceeding what should be ascribed to the general liability, aided by fatigue and loss of sleep, and, on the part of nurses and attendants, often by intemperate habits. The physicians of cholera hospitals are rarely contagionists. The history of cholera hospitals does not sustain the doctrine of contagion; and here, if anywhere, contagion should be demonstrated. Out of almost countless reports that authorize these statements. I select the following table drawn up for the report of Drs. Gull and Baly, referring to the general hospitals of London in 1849.

"Examine this table attentively. Guy's Hospital did not admit persons attacked with cholera; yet one in 163 of its inmates, and one nurse to 490 patients, died of that disease. Five of these institutions admitted the disease, but confined the patients to particular wards. They had an aggregate of 1466 general patients, and 381 deaths from cholera. Multiplying the deaths by two, the usual hospital ratio between cases and deaths, the product, 762, will be about the number of cholera patients admitted. The deaths by cholera among other patients were one in 147, and among nurses one to 371 patients, including those admitted with cholera. Three hospitals, with an aggregate of 750 patients, received probably about 150 persons sick with cholera (deaths seventy-seven), and they were distributed among other patients. The deaths among these other patients were three, or one in 250; and of the nurses only one to 900 patients died.

Hospital.	No. of Patients.	No. of Deaths among Patients admitted with Cholera.	No. of Deaths from Cholera among other Patients.	No. of Deaths by Cholera among Nurses.	How the Cholera Patients were distributed in the Hospital.
Guy's Hospital . . .	490		3	1	No cholera patients admitted.
St. Bartholomew's . .	500	198	1	1	Cholera patients in special wards.
St. Thomas's Hospital	430	66	6	3	" " " " "
London Hospital . .	330	40	None.	None.	" " " " "
University Hospital .	110	81	1	None.	" " " " "
King's College Hospital	96	46	2	2	" " " " "
Middlesex Hospital .	300	30	None.	None.	Distributed among other patients.
St. George's Hospital .	300	11	Two Surgical and one Medical.	1	" " " "
Westminster Hospital	150	37	None.	None.	" " " "

"Throughout England, indeed all Europe, and from our own country, the testimony is cumulative, and to the best of my recollection nearly uniform from cholera hospitals, that nurses, while they incur the general risks during an epidemic, aside from the effects of fatigue and the excessive use of intoxicating drinks, are not in any degree specially exposed to the disease. I may say, in parenthesis, that I believe there is no fact better established than that intemperate persons are especially liable to cholera. The same statement may be made of those who are employed in rubbing and bathing the sick; of those who empty and cleanse the vessels which receive the discharges; of those who are engaged in transporting the sick, and of those who remove the dead.

"But there is a class of nurses and attendants who are more exposed to the disease than those who are usually employed in cholera hospitals. I refer to such as are engaged in the service of the sick within institutions when the disease has become epidemic. An example or two will make the point clear. In seventeen public lunatic asylums in England (Baly and Gull, 1849) visited by cholera, the total number of patients was 3639; of these 454 were attacked, and 311 died. In the same seventeen institutions there were 407 nurses, attendants and resident officers, of whom eighteen were attacked and six died, or thus—

Attendants attacked, 1 in 23; died, 1 in 68.
Patients " 1 in 8; " 1 in 12.

In the Milbank prison, containing at the time 1107 prisoners, twenty persons were charged with the care of the sick, and there were 178 persons who were by their offices not brought in contact with them, or only occasionally. The deaths among the prisoners were forty-eight, or one in twenty-three; among the nurses one, or one in 20; among other persons (including guards, clerks, etc.), one, or one in 178. Take these two accounts together and it is clear that, so far as the evidence goes, in institutions where cholera is epidemic, nurses are no more liable to the disease than other inmates, making exception for those whose hygienic surroundings were of a more protective character—indeed, in the lunatic asylums, that they were greatly less liable than others; while the one death in the prison makes a very unimportant figure in the statistical estimate on the positive side, though significant in its negative relations.

"It does not appear that physicians who are attending cholera patients are more liable to the disease than others; indeed physicians seem to possess more than usual immunity. The number who have died in this city in the various epidemics is small. I have no statistics at hand to guide me, but I am confident that the percentage of mortality among them is less than among persons in the same social rank unconnected with the profession.

"Dr. Buel says, referring to the epidemic of 1854, of the Centre Street and Twenty-third Street hospitals, 'there were at different times eight or nine medical attendants, several of whom spent their whole time in the hospitals, eating and sleeping there, and no one took the disease;' and then adds, 'among the physicians attending five cholera hospitals, and the various other public institutions in which cholera prevailed extensively, there was not a fatal case, and only two were heard of that had the disease.' How sadly the records of typhus fever contrast with these statements, let the honoured names engraven on the mural tablet in this Hall testify; let the stricken families, that by a dire conscription are forced to contribute, year by year, their brightest ornament to swell the list of professional victims; let the bereaved and mourning, on whom my words now fall like the knell whose echoes have scarcely ceased, bear witness. An epidemic typhus in a hospital, I might also say, spares none; while epidemic cholera in hospitals assails so few, that we find no danger in such service beyond what pertains to the general epidemic influences.

"In considering facts like these, then, we are obliged to modify the opinion that might be formed from such striking instances as those of the Tooting School and those at Cumberland. Such occurrences can, indeed, be explained upon the general doctrine that there was an atmospheric condition that predisposed to the disease, and that the elements of the special poison were present and ready to combine whenever the ferment should be introduced; and that the ferment was in some way brought by the infected persons to each locality. In the case of the Tooting children, however, the disease did not become epidemic,

strictly speaking, in more than one of the five institutions. In the others, one to several of the 'attendants' suffered from the disease. In these instances the poison may have been imported, and not reproduced. This view receives support from the fact that 'several asylums and workhouses to which the Tooting children were sent were not visited by the disease,' although children died in them.

"There is another point that I must speak of, relating to the communicability of cholera. Drs. Baly and Gull directed particular attention to the question whether washerwomen, who were employed in purifying the clothes soiled by cholera patients, were particularly liable to the disease. They state that they had eighty-four communications relating to this matter; that in general when washerwomen took the disease, they were surrounded by the same influences that produced it in others, and it was difficult to determine whether there was any special danger in their occupation. They sum up by saying there were only seven instances in the eighty-four in which the evidence seemed fairly to establish connection between cholera and the clothes. At the same time they say the women who washed the clothing for the Tooting children escaped entirely; and of the thirty women in the laundry of the Milbank prison, not one was affected; while of one hundred women employed in other capacities through the prison, eight took the disease. The liability, then, even for the washerwomen, is not very great; it is perhaps a little greater than for nurses, as it is a little more for nurses than for physicians. But even if it were established that this occupation is especially dangerous, further inquiry would be necessary to determine whether the danger arises from a personal poison or a miasm imported with the clothes."

—

Prophylactic Arrest of Asiatic Cholera.—Dr. Henry MacCormac states (*Medical Press and Circular*, June 6, 1866) that "if there be a therapeutic fact more certain than another, it is that our success in the treatment of Asiatic cholera will, *cæteris paribus*, be in the exact ratio of the recency of the treatment.

"The truth of this statement was abundantly exemplified in the results of house-to-house visitations. In Glasgow, for example, after a system of house-to-house visitation, during cholera periods, had been once fairly organized, the mortality was surprisingly small. Cases of premonitory diarrhœa, for example, that, if neglected, would have run on to intractable and perhaps fatal cholera, were arrested by means of an opium pill and an opiate draught, with a mortality actually not exceeding one in 1,400. Nothing could be more astonishing or more entirely satisfactory. Nevertheless, numbers perished owing to neglect. The preliminary purging was either not checked at all, or having been partially checked recurred again, and not being again checked, eventuated in the fully-formed and fatal disease. I proved the fact myself in very, very many instances. Going among the dying and the dead, I have asked those about—Do you purge?—Yes. Very well, open your mouth; whereupon I could throw into the mouth and command them then and there to swallow a good grain or so of opium twitched from a lump of soft opium, which I always carried in my pocket for the express purpose. At the same time, and from the same source, I would produce a bottle of laudanum or Battley, and give 20 or 30 drops of the solution in a little water, taking care to leave a like dose to be repeated at bedtime or sooner upon an emergency. I remember once being in a house where four poor women, pitiful to relate, were lying dead at one and the same time. The mortality, in many instances, was greatly enhanced, too, by the homicidal practice, which I am sorry to say was too much encouraged, of giving and even repeating draughts of castor oil. It was too bad.

"During 1854, it was, that some alterations in the building took place, and a communication subsisting with the infected town, the Belfast District Asylum for the Insane, to which I was and am visiting physician, was visited with cholera. It broke out with startling suddenness, and forty of the inmates very rapidly perished. Many of the inmates were very unfavourable subjects for the disease, and I began to fear for the whole establishment. Intimately convinced, however, of the infinite value of prevention, it occurred to me that if I could not only arrest, but anticipate the premonitory diarrhœa, I might also arrest the disease. I immediately had prepared some dilute sulphuric acid, of whose general

efficacy in the treatment of choleraic diarrhœa, I had had ample experience; without waiting for the preliminary diarrhœa, I say, I gave to every inmate in the establishment a daily dose of about a drachm of the dilute acid in peppermint water The existing cases of the disease having run their course to death or recovery, *no other instance of the malady occurred;* and I had the unspeakable satisfaction, owing, as I am intimately convinced, to the prophylactic efficacy of the dilute acid, of witnessing the utter disappearance of the disease.

"I would strongly recommend, and as strongly urge upon the attention of the profession, and indeed the general public, the advisability, coupled, however, in every case with every proper general sanitary precaution, of having recourse, with respect to the entire community, of the prophylactic efficacy of dilute sulphuric acid, and in the very manner in which I myself tested it. I firmly believe, ever and always neglecting no effective sanitary precaution, that it would make us virtually masters of the situation, and render the ravages of cholera, really and truly, a thing of the past."

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Treatment of Premonitory Diarrhœa.—Dr Bowerbank says: "As regards the attacks of diarrhœa so prevalent during the visitations of cholera, I have seen all sorts of treatment employed—as mercurials, opiates, ipecacuanha, the mineral acids, laxatives, antacids, and astringents; and I have seen each and all succeed and fail in checking the disease; in cases in which the looseness was troublesome and continuous, tending to dysentery not infrequent after an attack of cholera, I have found strychnia of much service, either alone or in combination with iron. In prescribing strychnia in such cases, I generally gave it according to Marshall Hall's formula. In the majority of cases of diarrhœa I think a little ginger tea with a few grains of carbonate of soda, with attention to diet, proved sufficient. If there was pain, a few drops of some preparation of opium were added. In such cases, too, chloroform and chlorodyne prove of service; but in all cases, even of diarrhœa, the treatment should be suited to the particular case."—*Med. Times & Gaz.*, April 14, 1866.

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Treatment of Cholera.—"As to the treatment of Cholera," Dr. Bowerbank says, "My experience is, that at the commencement of an epidemic the majority of cases die, and appear to be unamenable to any curative treatment. I have seen drugs without number tried, and have heard each and every one cried up for a time as a specific and certain cure, but have seen them again fail and put aside. I have seen and tried small and repeated doses of calomel; also large doses of the same; also small and monstrous doses of acetate of lead, the mineral acids, the alkalies, opiates, quinia, ipecacuanha, belladonna, mineral and vegetable astringents, cajuput oil, croton oil, castor oil, turpentine, creasote, nitrate of silver, sulphite of magnesia, tartar emetic, mustard, table salt in large doses, 'Stevens' saline powders,' charcoal, chlorate of potash, eupatoria or bitter bush, the fresh juice of the aloe, and many others; spirituous stimulants to intoxication, carbonic acid gas, the so-called 'Liverpool mixture,' and other boasted formulæ, warm baths, hot-air baths, external frictions, enemata of all kinds, saline injections into the veins;—but, nevertheless, I fear the results have been very unsatisfactory on the whole. Few of the first cases got well, and if they did I could not satisfy myself that their doing so was the result of what they had taken. I am quite certain that in the epidemic of 1850 I saw much mischief done by the use of spirituous stimulants and of opiates; so that in the epidemic of 1854 I almost entirely banished these remedies from my practice. Calomel and other mercurial preparations are, in certain cases and at certain stages of the disease, useful; but they have no specific effect, and in the hands of the unprofessional are calculated to do more harm than good.

"I think I have seen more good to arise from the use of Stevens' powder than from any other mode of treatment—in fact, in 1854 I confined myself chiefly to this. Having read of the use of sea-water in the treatment of cholera, and from the difficulty of getting the saline powders prepared in sufficient quantity, Dr. Campbell and myself were inclined to give sea water a trial among the prisoners of the General Penitentiary in Kingston. We had buckets of sea-water brought from a distance from the shore, and this, well-iced by pieces of ice thrown into it, was doled out in small quantities to the sufferers; they drank it greedily, and strange to say, of the seventeen

cases who took it all recovered. Unfortunately it was not tried till towards the decline of the epidemic. In almost every case after the fourth or sixth dose the alvine dejections became tinged with bile, as also the contents of the stomach vomited."—*Med. Times & Gaz.*, April 14, 1866.

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Quarantine and Cholera —Dr. Bowerbank, in an article entitled "Lessons from the Cholera at Jamaica," says: "I have had no proof that any of the visitations I have seen were traceable to importation by a particular vessel; but I have known cholera introduced into a district and an island, and the disease not extend itself; thus, at any rate, proving that something more than mere introduction of the disease was necessary to its extension, and over which quarantine restrictions could exercise no influence. That cholera attacks certain districts or places, certain towns and streets, certain houses and rooms, and during the prevalence of an epidemic nestles there, I am confident, and I believe that in every such instance a bad sanitary status will be found to exist.

"The great preventives of cholera and all other epidemic diseases are pure air, pure water, plenty of daylight, and cleanliness in its widest acceptation. Where these essentials to health exist, cholera may come, and may proclaim its presence by the occurrence of diarrhœa, borborygmi, cramps, and other well-known symptoms, and it may seize as a victim a person predisposed to disease by intemperance or depression of body or mind, but here it will not nestle.

"During the epidemic of 1850, I have known towns and villages nearly depopulated; whole yards and houses, ships in port, swept clean, and not an inmate left to tell the tale. But in all such cases neglect of sanitary measures and the open violation of Nature's laws explained the cause. It will thus be seen I am of the opinion that we have no power to exclude epidemic cholera. This mysterious visitor will come to our shores in spite of us; but we have the power to lessen its ravages and to deprive it of its sting, and in effecting this we at the same time adopt the best means to rid us of those less dreaded (because more familiar and slower in their course) but more fatal scourges of our population, typhus and typhoid fever, and the entire class of tuberculous disease.

"'Prevention is better than cure.' In no instance is the truth of this adage more obvious than as regards a visitation of epidemic cholera. Experience in all parts of the known world has taught us that its ravages may be lessened or prevented by judicious sanitary measures; but that where these have been neglected, for a time at least, after its advent, this disease resists or is but little amenable to curative treatment. In case of the outbreak of cholera in a notoriously unhealthy district, I believe, as regards the mass of the people, instead of, as hitherto, adopting the house-to-house visitation system and the unprofessional and wholesale administration of medicines, it would be far better that arrangements should be made to transfer the inhabitants, or as many as possible of them, to another place, even though it should be requisite to provide tents or to allow them to remain uncovered."—*Med. Times and Gaz.*, April 14, 1866.

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The Albumen of the Blood in Cholera.—The researches of M. Fernaud Papillon on the chemical and physical constitution of the blood in cholera have been published in the *Journal de l'Anatomie* (No. 2), and deserve the notice of the profession. His observations on the nature of the albumen removed from the blood of cholera patients during the algide period show that that fluid differs materially from the normal albumen. The albumen was separated from the corpuscles by repeated filtrations. The following are the results of M. Papillon's experiments: (1) This albumen, placed for four days in water, became neither hydrated nor swollen; it remained just as it was when first added, although ordinary albumen is either dissolved or swells up under the same circumstances. (2) It does not dissolve in potash or soda, even at an elevated temperature, although ordinary albumen is soluble in these reagents, even at ordinary temperatures. (3) When treated with hydrochloric acid, it slowly dissolves, and the solution, instead of having the usual deep-violet colour, is only faintly tinted. (4) At the ordinary temperatures, common albumen decomposes rapidly a mixture of nitric and sulphuric acids, nitrous vapours being disengaged. Choleraic albumen does not do so at the ordinary temperatures. Ordinary albumen is very rapidly dehydrated by sulphuric acid;

the choleraic albumen is affected only after a long exposure.—*Lancet*, June 9, 1866.

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Cholera at Liverpool.—It appears from the *Med. Times and Gaz.*, June 2, 1866, that no new cases of cholera had occurred among the emigrants landed in Liverpool since 14th of May, and that there was no suspicion of the disease having been localized in any part of the borough. This is coupled with the following significant statement:—

"In 1854 the cholera, as now, reached Liverpool through the transit of emigrants, but did not immediately spread among the other inhabitants. Thus, though in the week ending April 8 of that year there had occurred numerous deaths among the passengers and crew of the American vessel *Winchester*, the disease did not fix itself in the town with anything like epidemic virulence until the third week of July, when a fresh importation of sick emigrants was attacked by cholera on board the ship *Derigo. Then, unfortunately, there were co-existent all the climaterial causes and exciters of the disease*, and from that time until the latter end of October it raged with fatal intensity."

The hope is expressed in a recent No. of the *Lancet* (June 16), "that note will be taken of the remarkable phenomena which have lately been presented in connection with the cholera in Liverpool. Its clear importation from an infected place; its frightful development under the insanitary conditions of a crowded emigrant ship; its quick and rapid disappearance under a better sanitary condition of the affected; its limitation by isolation, the only parties attacked beyond the original group, who came from an infected place, being those waiting upon the sick in various ways. These phenomena require no comment now. They involve no particular theory of contagion; but they involve the portability by persons or personal luggage of the cause of cholera, and are full of interest and importance. They go to show that cholera may be carried into a country, and may be 'stamped out' of it."

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Progress of Cholera.—Cholera has broken out among the returning pilgrims from Mecca, and on the 26th and 27th of May last more than 100 deaths occurred from this disease at Djeddah.

The disease is still raging in *Holland*, and during the first week in June 85 cases, of which 55 were fatal, occurred in Rotterdam.

In the *city of New York*, according to Dr. Harris's mortuary report, six deaths from cholera occurred during the week ending June 16. Other cases have been reported, but it does not prevail as an epidemic. In other respects the health of that city, according to the *Medical Reord* (July 1), is unusually good. The number of cases at the Quarantine station, near New York, is decreasing.

At *Elizabeth*, N. Jersey, or rather in a filthy suburb of that city, it is stated in a New York paper of June 28th, that 21 cases have occurred, of which 9 proved fatal.

In *Jersey City* two well-marked cases are reported.

One case is reported in *Baltimore.* The subject of it was a man who was attacked immediately after his return from New York, where he is supposed to have contracted the disease, which proved fatal.

MEDICAL NEWS.

DOMESTIC INTELLIGENCE.

Library of the College of Physicians of Philadelphia.—We are happy to announce that through the liberality of their President, Dr. Geo. B. Wood, this college has been enabled to make arrangements by which their valuable and rapidly increasing library—already amounting to about thirteen thousand volumes—is *daily* open for the use of the Fellows of the College from 11 A. M. to 3 P. M., during which hours a member of the library committee is in attendance to lend out and receive books returned, and to aid the Fellows in consulting the works in the library.

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Health of Philadelphia.—The following table, compiled from official sources, exhibiting the mortality from bowel complaints and also that from all diseases for each week in June during the years 1866 and 1865, shows that the general mortality is unusually small, and that from bowel affections, though slightly on the increase, as is always the case at this season, is far below that of last year. The total number of deaths for the

first six months of the present year, the Register of Deaths informs us, is about *two thousand less* than for the same period last year. While this state of things continues no fears need be entertained of an outbreak of cholera in our city.

	Mortality from					
	Cholera Infantum.	Diarrhœa.	Dysentery.	Cholera Morbus.	Total from Bowel Affections.	Total Mortality from all Diseases.
Year 1866						
Week ending June 2,	2	2	3	0	7	242
" " " 9,	5	3	2	2	12	247
" " " 16,	9	3	1	1	14	284
" " " 23,	7	5	0	0	12	266
" " " 30,	47	8	2	4	61	335
Year 1865.						
Week ending June 3,	4	5	2	0	11	298
" " " 10,	8	7	2	2	19	278
" " " 17,	30	9	4	0	43	293
" " " 24,	53	12	9	2	76	369
" " July 1,	89	15	5	2	111	381

Trichiniasis in Marion, Linn County, Iowa.—In April last nine persons of one family in Marion, Iowa, who had eaten raw ham, were attacked with trichiniasis. The family consisted of ten, one of whom not having partaken of the food, escaped.

Dr. H. Ristine, who attended the cases in consultation, writes us under date of June 18th, that of the nine attacked five had died, the remaining four he thought would recover. Dr. Ristine has very politely sent us a portion of the psoas magnus muscle of one of the victims to the disease, which we find on microscopic examination to be full of free trichinæ.

It is said that six cases have also occurred in a family residing twelve miles north of Marion, in the same county.

It might seem surprising, were not the recklessness of persons so common, that any one should indulge in such a dangerous gratification of their appetite as to eat raw pork.

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Poisoning by Cyanide of Potassium through Carelessness.—Two cases of this are recorded in a recent number (June 21, 1866) of the *Boston Med. and Surg. Journal*, which deserve public attention.

In the first, a porter in a machine-shop, feeling thirsty dipped a tin cup into a jar of liquid, which he supposed to be water, and swallowed about three drachms before he discovered his mistake. In two minutes he became senseless, and was taken to the hospital, and strange to say, after an emetic, the use of the stomach-pump and of ammonia, he recovered, for the amount of the poison swallowed was estimated at twenty-three grains, and thirty-five minutes elapsed before any of the remedies took effect.

The other case occurred a few days ago under similar circumstances. A thirsty man, a stranger amongst us, went into a jeweller's shop, and asked for a drink of water. He was directed to the rear where the sink was situated. Seeing a large covered stone jar standing near it, such as is often used for holding ice-water, he lifted the cover and drank, without stopping to look at it, about half an ounce of the liquid. He became insensible in five minutes. It was found impossible to administer an emetic of sulphate of zinc in the apothecary's shop, whither he was at once taken, or later to use the stomach-pump at the hospital. He died in thirty minutes after drinking what he supposed to be a harmless draught of water. The liquid was a solution of cyanide of potassium in water, of the same strength as that swallowed in the first case, a pound to the gallon. The quantity taken was therefore about half a drachm of one of the most deadly poisons known, of which two or three grains are sufficient to kill a large animal, and five grains have destroyed human life in several instances. The prolongation of life in this, and the wonderful escape from death in the former case, were undoubtedly in great part owing to the fact that the stomach was filled with food, and that on this account the poison was not so rapidly converted into hydrocyanic acid and absorbed.

The editor justly remarks:—

"We are far too lax in our police regulations respecting the use and sale of poisons, and if the same energy which is exercised in the enforcement of the liquor and Sunday laws were turned in this direction, much good would result."

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Wholesale Poisoning by Lead.—During the past spring a large number of persons residing in the Walkill Valley, Orange County, New York, were attacked with symptoms of lead poisoning.

A correspondent of the *Public Ledger* (Philadelphia) states that:—

"After considerable research it was found that the lead was taken by the sufferers in bread and meal, and as a greater part of those staples were manufactured at a mill in Phillipsburg, an investigation was at once made in that direction, and the following facts were elicited:—

"It appears that the proprietor of the mills had gained a reputation for the superior quality of his flour, and that the farmers, for many miles around, were in the habit of bringing their wheat and corn to his mill to be made into flour and meal Aside from this, he exported largely, so that his mill was kept constantly going, by night as well as by day. One set of stones was set apart for his "custom" work. This was an old set, constantly needing repairs, and large cavities frequently manifested themselves, which, instead of being filled up with the cement generally used for that purpose, were filled with common lead. Some of these holes were as large as a hen's egg: one, we are informed, being as large on the surface as the palm of a man's hand.

"If when filled the lead projected above the surface of the stone, it was hammered down level. Of course the attrition of the grinding detached minute particles of lead from the stone, and mingled them with the flour. The lead thus communicated, when fermented and subjected to baking with the flour, was immediately transformed into carbonate of lead, one of the deadliest of poisons.

"As soon as it was ascertained that the disease originated from the bread eaten by the sufferers, samples of the flour were analyzed by Dr Dorrance and Mr King, a chemist, of Middleton. These gentlemen found, to their astonishment, that the lead could be discerned with the naked eye. It was, however, subjected to the usual standard tests, all of which revealed the presence of lead in considerable quantities. Of course, these revelations caused a panic throughout the surrounding country.

"A statement of the leading physicians of this vicinity shows two hundred and thirteen cases of lead poisoning. I am informed that over one hundred cases have occurred in the vicinity of Goshen. Many of the victims are prominent citizens.

"I am informed that a quantity of the flour has been shipped to New York, and that seven cases of poisoning from it have occurred in that city."

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Stevens Triennial Prize.—A Prize Fund of one thousand dollars has been established by Alexander H. Stevens. M. D., Ex-President of the College of Physicians and Surgeons, New York, for the improvement of Medical Literature, on the following plan.

Each Prize to be awarded triennially is to consist of the interest yielded by the principal fund during the previous three years, and will amount to about two hundred dollars.

The administration of the Prize is intrusted to a commission, consisting of the President of the College of Physicians and Surgeons (*ex-officio*), the President of the Alumni Association (*ex officio*), and the Professor of Physiology (*ex-officio*), in the same institution.

The following subjects have been selected, at the request of Dr. Stevens, for the first triennial Prize under this fund

1st. The best means of preventing death after surgical accidents.

2d. The history of improvements in the medical art, and the means by which they are attained.

The competing essays on either of the above subjects must be sent in to the President of the College of Physicians and Surgeons, New York, on or before the first day of January, 1869. Each essay must be designated by a device or motto, and must be accompanied by a sealed envelope bearing the same device or motto, and containing the name of the author.

The envelope belonging to the successful essay will be opened and the name of the author announced at the annual commencement of the College in March, 1869.

This Prize is open for universal competition.

Edward Delafield, M. D., *President of the College of Phys. and Surg.*

Alfred C. Post, M. D., *President of the Alumni Association of the College of Phys. and Surg.*

J. C. Dalton, M. D., *Professor of Physiology in the College of Phys. and Surg.*

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College of Physicians and Surgeons, New York.—Dr. Freeman J. Bumstead has been appointed Professor of Materia Medica and Clinical Medicine in place of the late Prof. Jos. M Smith; and Dr. H. B. Sands adjunct Professor of Anatomy.

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Destruction of the Building of the University Medical College and its valuable Contents.—We regret to make the announcement that the building of the University Medical College of this city was completely destroyed by fire on the night of the 21st of May. The valuable museums of Professors Mott and Post have been entirely lost, together with the immense and costly laboratory of Professor Draper, and the rare collection of shells and minerals belonging to the Lyceum of Natural History. Notwithstanding, however, this appalling catastrophe, we are happy to be able to state that the Faculty have not allowed a single day's intermission in the spring course of lectures. The upper portion of the Demilt Dispensary is now being temporarily used for a lecture room. The friends of the College will be glad to learn that the institution is to be at once rebuilt, with many additions, and that the work will be carried on as rapidly as possible.—*Medical Record*, June 1, 1866.

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Atlanta (Geo) Medical College.—This institution commenced its eighth regular summer course of Medical Lectures on the 7th of May last. The faculty consist of: John W. Jones, M. D., Emeritus Professor of Practice of Medicine; J. P. Logan, M. D, Professor of Theory and Practice of Medicine; A. Means, M. D., Professor of Chemistry and Pharmacy; D. C. O'Keefe, M. D., Professor of Anatomy; T. S. Powell, M. D., Professor of Obstetrics and Diseases of Women and Children; Eben Hillyer, M. D., Professor of Physiology; W. F. Westmoreland, M. D., Professor of Surgery; S. H. Stout, M. D., Professor of Surgical and Pathological Anatomy; J. G. Westmoreland, M. D., Professor of Materia Medica and Therapeutics.

The faculty have made arrangements for using the Freeman's Hospital for Clinical instruction.

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Economical Sieves.—Dr John Parsons, of Mount Pleasant, Kan., writes to us:—

"For sifting dry powders sieves may be of stiff paper punched with needle holes the size of the needle making the sieve fine or coarse. The sieve may be made of any size required and secured in a drum as is the ordinary wire sieve, they are easily cleaned, cheap, and may be found useful by some practitioners."

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The New Sydenham Society.—This very useful society announce the following works to be published for the current year's subscription:—

I. Bernutz and Goupil: Clinical Memoirs on Diseases of Women. Vol. I. Edited and translated by Dr. Meadows.

II. Hebra on Diseases of the Skin. Vol. I. Translated by Dr. Hilton Fagge.

III. Griesinger's Manual of Mental Diseases. Translated by Dr. Lockhart Robertson, and Dr. Rutherford.

IV. The Society's Atlas of Skin Diseases. A Sixth Fasciculus, to comprise (in three beautifully coloured plates 18×24 inches) Illustrations of—Eczema Impetiginoides on Face of Adult; Eczema on the Face, &c. of Infant; Eczema Rubrum on Leg of Adult; Psoriasis of hands and Finger Nails; Syphilitic Psoriasis of Finger Nails; Congenito-Syphilitic Psoriasis of Finger and Toe Nails; Onychia Maligna; Chronic General Onychitis.

We invite the attention of our readers to the advantages offered to subscribers for obtaining at a comparatively small price the valuable publications issued by this society.

For terms of annual subscription, or for list of works published, application may be made to Richard J. Dunglison, M. D., *Honorary Local Secretary*, 39 S. 11th St., Philadelphia.

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American Medical Association—The Committee of Publication have issued the following circular:—

"The Committee of Publication are obliged to appeal to the members of the American Medical Association for contribu-

tions of money to defray the expenses of printing and illustrating the transactions of the last meeting.

"The amount of assessments at the meeting in Baltimore falls short of that required by more than one thousand dollars, and unless this deficiency is supplied the volume cannot be published.

"Many members have expressed their willingness to contribute, and one has agreed to give a hundred dollars if there is any prospect of aid from others. You are earnestly requested to contribute and to forward whatever amount you may be disposed to give, to Dr. C. Wister, 1303 Arch street, Philadelphia."

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Physicians' Advertisements.—We commend to the attention of the profession the following just remarks extracted from an editorial in our contemporary, the *Boston Med. and Surg. Journ.*, May 10th, 1866.

"The frequent abuse of the mistaken leniency which allows a physician publicly to announce or recommend himself, has become so frequent among us of late, as to call for some notice from us and for stringent action on the part of our State Medical Society. Until recently the announcement of a change of residence, or of a resumption of practice, was the extent of what was considered justifiable by the laws of professional decorum, although even these exceptions have sometimes overstepped the limits of propriety by being kept too long before the public eye, but now we find the newspapers of this city every day containing the advertisements of members of our body which can in no way be distinguished from those of some professional quacks. Not satisfied, moreover, with seeking notoriety by special and extra puffs in the columns of the daily journals, disgraceful exhibitions of machinery and written promises to cure are conspicuously presented to the gaze of the passer-by in office windows, pamphlets containing accounts of wonderfully successful cases are published for public distribution, and self-laudatory circulars are issued for the medical reader.

"There is another class of advertisements which is also becoming more frequent, and which, although hitherto considered at least not improper by some of the profession, is so liable to abuse in its present undefined condition, that it has become a matter worthy of grave consideration. We mean the cards of so-called specialists published in a medical journal. It is a custom which has so gradually sprung up in this city as to have become an almost recognized law amongst us, and we do not in the least intend to reflect upon the gentleman who have availed themselves of its privileges. It is a custom, however, which is confined to ourselves, and which would be considered entirely unprofessional in any other part of the country."

The editor of the *Medical Times and Gazette* (London), in a recent number, republishes several advertisements taken from our Boston contemporary, to show that professional advertising in American journals differs from what is allowable in England. The dignity and respectability of the profession in Boston has gained nothing by the method of advertising practised by certain specialists there.

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Obituary Record.—Died, in Boston, June 21, 1866, Reuben D. Mussey, aged eighty-six. Dr. Mussey was one of the most eminent Surgeons of New England, and was for many years Professor of Surgery in Dartmouth Medical College, in his native State. About the year 1838 he removed to Cincinnati, Ohio, and was appointed Professor in the Miami Medical College, which he held until some ten years ago. He communicated a number of very valuable papers to the *American Journal of the Medical Sciences*, among others one on fractures of the neck of the thigh-bone within the capsular ligament.

FOREIGN INTELLIGENCE.

Liquor of Villate.—M. Houel presented to the Imperial Academy of Medicine (May 2, 1866) a pamphlet on this preparation by Dr. Notta, of Lisieux, which drew from the members some interesting remarks, a summary of which may interest our readers.

The liquor of Villate is an astringent and escharotic preparation which according to the Veterinary Pharmacopœia is composed as follows—

Liquid Subacetate of Lead	30 parts
Crystallized Sulphate of Copper,	
Crystallized Sulphate of Zinc, āā	15 "
White Vinegar . . .	200 "

Mr. N. has employed this preparation

with success for many years in the treatment of caries, and of fistulæ following cold abscesses. The memoir of Dr. Notta contains numerous striking cases drawn from his own practice and that of M. Nelaton showing the efficacy of this preparation. There is much difference of opinion, however, among the members of the Society of Surgery of Paris in regard to this article. MM. Houel, Léon, Labbé, and Desormeaux assert that they have obtained the best results from its use, and have never seen any injury or even serious inconvenience result from it.

On the contrary MM. Legouest, Chassaignac, Boinet, Le Fort, and Laborie, state that it occasions excessive, insupportable pain, irritation and very serious inflammation. Finally MM. Follin and Verneuil have used it sometimes with good, sometimes bad effects; both have found injections of the fluid induce acute pain, the first has never seen any injury result, the second has witnessed severe inflammation which, however, resulted in a cure.—*Revue de Thérapeutique Méd.-Chirurg.*, June 1, 1866.

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The Baneful Effects of Nicotine prevented.—M. Melsens has found that tobaccos, from various countries, contain nicotine in very different proportion. In tobacco from some parts of France (*e. g.*, the department of the Lot) there is 7.96 per cent. of nicotine; whilst Havana tobacco contains only two per cent. He proposes to smokers a way of preserving them from the effects of the alkaloid, and advises them to put into the tube of the pipe or cigar-holder a little ball of cotton, impregnated with citric and tannic acids. As the smoke passes through the cotton, it will deposit the nicotine therein, in the shape of tannate and citrate. M. Melsens has made very ingenious experiments, which go a very great way to prove that he is perfectly correct.—*Lancet*, April 7, 1866.

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Extirpation of Scapula.—M. Michaux, of Louvain, has lately presented a memoir to the Academy of Medicine of Paris giving an account of the case of a boy, aged fifteen, from whom he successfully removed the right scapula, for an encephaloid tumour involving that bone and its muscles, in November, 1864. The shoulder-joint was disarticulated and the arm left, the scapula having been turned forwards from the ribs, and the disarticulation being effected with the écraseur. The boy recovered from the operation, but died in the following September of a cancerous tumour of the mediastinum.—*Gaz. Médicale.*

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Trichina in a Cancerous Tumour.—Dr. Klopsch relates in the April number of *Virchow's Archiv* the case of a lady who consulted him in 1857 concerning a tumour of the right breast, and on interrogating her concerning her previous health, he found that this had always been very good except at one period—viz., in 1842—when, while residing at Dresden, she became the subject of severe pains in the joints and limbs, followed by paralysis. After a while anasarca appeared, and continued many weeks. At the end of three months from this her health began to improve, and after four months' confinement to bed she recovered. Later, she married and bore a child, and, in fact, continued in good health, with the exception of occasional muscular pains. The tumour in her breast had appeared since early in 1857, and exhibited the signs of carcinoma, and the glands of the axilla having become slowly affected, while the cancer cachexia was not developed, Professor Middledorpf amputated her breast in May, 1863. Two years later, cancerous infiltration of the axilla having appeared, and the patient's general health being good, it was resolved to excise such parts. While separating these from the subjacent intercostals, Professor Middeldorpf observed that they were beset with white granules, which he suspected to be trichina capsules. Examined microscopically, every portion of the muscle the size of a pin's head was found to contain four or five completely calcified trichina-capsules, trichinæ, on a section being made, being found free and living. This is the first instance on record in which twenty four years after an invasion of trichiniasis, living trichinæ have been still discoverable. That they really were deposited in 1842 is shown, not only by the symptoms then present and the subsequent good health of the subject, but also by the fact of two of her servants having then died suffering from similar symptoms. It is an interesting speculation how far there is any etiological connection between the trichiniasis and the cancerous degeneration.—*Med. Times and Gaz.*, June 9, 1866.

Treating Wounds by Pneumatic Occlusion.—M. Jules Guérin, who during the last thirty years has been developing the principles and practice of subcutaneous Surgery, read at the last meeting of the Academy of Medicine a memoir on the "Treatment of Exposed Wounds by Pneumatic Occlusion," intending by this not very well expressed title to indicate the action of an apparatus which he has contrived, by the aid of which open wounds involving the skin and subjacent parts may be assured of a protection from the action of the air analogous to that afforded by the skin in the case of subcutaneous wounds, and therefore, freed from suppurative inflammation, enabled to heal by immediate union After trying a long series of experiments by covering the wounded surfaces with various substances capable of isolating them from the atmospheric air, and finding these one after another fail, either by reason of the penetration of the air or the accumulation and putrefaction of the products of secretion and exhalation—he believes that he has now devised an apparatus capable of successful application. Envelopes of various forms and dimensions formed of vulcanized caoutchouc are adapted to any part of the body, and when applied to the injured part they are introduced into a metallic receiver, which is kept constantly exhausted. Between the wounded surface and the caoutchouc envelope is placed a very thin, permeable tissue, in order to facilitate exhalation from the surface. Capable, as M. Guérin believes, of a very wide application, this apparatus has at present been tried in the following cases—viz., (1) An excoriated wound left after the removal of a fibrous tumour from behind the malleolus, was covered with some waxed silk and placed in the air-tight apparatus, rapid cicatrization without suppurative inflammation following. (2) In a fracture of the forearm, with a fragment of the radius penetrating the skin, the same mode of dressing was applied, and at the end of the fourth day, the wound of the skin having become closed, the case was treated as a simple fracture. (3) After an amputation of the thigh the flaps were brought together by seven points of suture, and the stump having been placed in the apparatus, cicatrization was found to have become completed by the seventh day. As it was not sufficiently solid, however, the apparatus was re-applied until the eighteenth day: neither fever, suppurative inflammation, nor notable pain occurring during the treatment. (4) The palm of the hand having been much shattered by the explosion of a cartouche exposing the metacarpo-pharyngeal articulations, fifteen sutures had to be applied to bring the fragments of skin together before the part could be placed in the apparatus. Once there, however, all suffering ceased, elimination of mortified parts taking place with ease, and excellent cicatrization following.—*Med. Times and Gaz.*, Feb. 17, 1866.

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New Galvano-Caustic Knife.—At the *Société de Chirurgie*, M. Broca exhibited a new galvano caustic knife, invented by M. Séré, of the Military Hospital at Vincennes. The blade of this knife, formed of platinum, can be heated as high as 1500° C. by the passage of a galvanic current from a Grenet pile. Platinum being a soft metal, this blade has no cutting edge, but it requires an excellent one under the influence of the electrical heat, which instantly communicates to it a special temper, the blade again becoming blunt upon the abatement of the heat. At 1500°, a white-red heat, the vessels cleanly divided remain open, and the blood issues freely out. The instrument is, in fact, graduated from 1500° to 600°, the heat being increased or diminished by a very simple procedure, which consists in elongating or shortening the portion of platinum comprised in the circuit. The blade can thus be made to pass through all the intermediate degrees from a white-heat at 1500° to a dull red at 600°; and by means of these graduations the instrument can be made to fulfil three different surgical indications—(1) at 1500° it divides the tissues, producing hemorrhage; (2) at 600° hæmostasis is produced at the same time as the incision; (3) and between these two limits it divides and cauterizes simultaneously. It is, moreover, in its mechanism an ingenious improvement upon the galvano-caustic knife already in use. M. Demarquay observed that he has once had occasion to employ the instrument, and he became alarmed at the extreme facility with which this knife, without a cutting edge, cuts through the tissues; and if care be not taken much more of these may become divided than is intended. He thinks surgeons should have their attention drawn to the excessive and truly fearful cutting powers

of this knife. M. Broca could really see nothing alarming in the powers of the knife; but that may be from his temperament being different to that of M. Demarquay.—*Ibid.*

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Alcoholized Milk for Infants.—M. Jules Simon, in his new work *Le Travail*, states that at Jelle and Rouen there are some women so saturated with intoxicating liquor that their infants refuse the breast of a sober woman. In the mountains of the Vosges the infants drink brandy.—*Lancet*, April 7, 1866.

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Poisonous Principle of Mushrooms.—Dr. Letelleir says, that the poisonous substance in mushrooms is a fixed, non-crystallizable, narcotic principle—amanitine. It is precipitated by iodine and tannin. The treatment for poisoning thence resulting is vomiting and purging, followed by a strong aqeous solution of tannin.—*Brit. Med. Journ.*, April 7, 1866.

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Deodorizing Properties of Ground Coffee.—Dr. Barbier affirms that ground coffee possesses some remarkable properties as a disinfectant. In several cases where he had to make post-mortem examinations of bodies under *very disagreeable* circumstances, he found that a handful of coffee strewn over the body and about the room quite overcame any bad odour.—*Lancet*, April 21, 1866.

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Ozone.—For the past few months our continental neighbours have been making known some valuable additions to the knowledge of this body, to the more interesting of which we shall call attention.

Our readers are probably all aware that the existence of a substance, called by its discoverer *ozone*, was made known to the scientific world by Schœnbein. He did not then isolate it as hydrogen, iodine, magnesium, or other substances have been isolated; nor has he or the other workers at the subject succeeded in doing so since, although more than the quarter of a century has elapsed since its nature first became matter for investigation.

To form it there must, all are agreed, be *oxygen*, but we can hardly say that all are also agreed that there must not likewise be hydrogen, or rather, perhaps, water. On the whole, however, the experiments of Andrews and Tait may be considered as setting the question at rest, at least, so far as this: From oxygen alone some of the phenomena indicating the presence of ozone can be obtained. The question is not so satisfactorily answered as to whether the substance that is formed in presence of water-vapour, and answering to the tests of ozone, is formed from oxygen only, or from a combination of oxygen and water.

But we must not say more of its nature until we have stated some of the means of obtaining it, or, more correctly speaking, obtaining indications of its existence. If perfectly dry and pure oxygen gas be electrified by passing a series of sparks through it, or, even better, according to Dr. Andrews, by silently discharging machine-electricity through it, ozone is produced. That is to say, the oxygen acquires new properties. It acquires a peculiar smell, such as is observed on standing near a large electrical machine in action, or much like that of a dense fog. It diminishes in volume. It becomes capable of *oxidizing* bodies in a way that it could not do before, so that it becomes corrosive, destroying most organic substances, such even as caoutchouc, and acting on metals, even silver, oxidizes and decomposes salts ordinarily stable, such as sulphate of magnesia and iodide of potassium, and even combines with the inactive substance nitrogen (in the presence of moisture). It is practically insoluble in water, but is absorbed by it if the water contains a material quantity of organic matter. If the oxygen which has been thus changed is treated with some of the substances affected by it, these active properties disappear, and a great part of the original oxygen employed is left unchanged. But Frémy and E. Becquerel have shown that by electrifying the oxygen in contact with moist metallic silver, or a solution of iodide of potassium, all the oxygen can be so changed as to be absorbed by these substances.

Other methods of forming ozone in the presence of water are by gently heating a mixture of air and ether vapour, or by exposing clean moist phosphorus to the air. In these cases the formation of the ozone seems to be simultaneous with the partial oxidation of the acting substance. It is also formed during the electrolysis of dilute sulphuric acid, or, as it is the fashion to say, of water acidulated with sulphuric acid. And also by the action of sulphuric acid

on peroxide of barium, and by other laboratory methods.

It has been shown to be formed during fermentation and the growth of moulds, and it is believed to be very generally produced during oxidation at ordinary temperatures. It, however, can hardly be said for certain that oxidation is a cause of the ozonization of oxygen, as we know that all the oxidations that do take place are producible by ozone itself, so that it may be that ozone is produced by the contact of oxygen with these bodies, or in other ways, and that then these bodies begin to oxidize under the action of the ozone.

Now, with regard to the test of its presence, there are several, but there is hardly one of them which cannot be challenged as an uncertain indication of it. One of the earliest tests employed, but seldom used now, was a white paper impregnated with sulphate of manganese, an almost colourless salt. This paper is turned brown by the formation of hydrated peroxide of manganese. Another test, proposed by Schœnbein, and the one most in use at present, is white paper impregnated with starch-paste and iodide of potassium. This paper is turned blue, or a colour approaching it, by ozone, potassa being produced and iodine liberated, which then forms the blue compound of starch and iodine. M. Houzeau has introduced, and for a long time employed, strips of wine-coloured litmus-paper, half of each of which only is impregnated with iodide of potassium. This he does because there are other substances that are liable to change the iodized starch-papers by liberating iodine which will not affect these papers. For these other substances liberate the iodine by forming a neutral salt with the potasslum, such as acid vapours, chlorine, etc., but ozone does so by forming potassa, which is alkaline. This akalinity his papers indicate by the part charged with the iodine becoming, under the influence of ozone, blue from the action of the potassa on the violet litmus, and then contrasting with the unchanged colour.

We have already indicated the most striking properties of ozone, but there are still some things requiring notice. By its powerful oxidizing action on organic matter, it quickly purifies air or water charged with organic matters, removing smell and taste from them. Indeed, the most offensive masses of putrid matter lose their offensiveness to the senses by the action of this body. Its active chemical properties render it a powerful irritant to mucous surfaces. By heat ozonized oxygen loses all the properties of ozone, and regains its own; among others, its proper volume.

We have also to say a little concerning the destiny of ozone. Since oxygen converted, or partly converted, into ozone, contracts in volume, it is evident that ozonized oxygen must be denser than ordinary oxygen. Attempts have recently been made to determine its destiny, by M. Soret. We must mention that when ozonized oxygen is exposed to the action of iodide of potassium or moist silver, it loses its peculiar properties, except that it does not reassume its original volume, as it does when heated. Further, that the loss of oxygen is accounted for, and the absorption of ozone proved, by the fact that a quantity of iodine chemically equivalent to this oxygen or ozone is set free from the iodide of potassium. It is just possible, it seems to us, that ozone may be a vapour of very low tension, of a highly volatile liquid, which we have not yet been able to get in sufficient quantity in a given space to make it reach the point of maximum density, when formation of liquid would take place. For, then, the slight loss of elastic force by the absorption of it from its mixture with oxygen might well escape observation. However, chemists do not seem to hold this view. The one which has for some years been suggested is that ozone is half as dense again as oxygen. On this hypothesis, iodide of potassium is considered to absorb one-third of the matter of ozone, and to liberate the other two-thirds as ordinary oxygen. This, of course, requires the further admission that the ozone behaves as if formed of two kinds of matter, two kinds of oxygen, and that it is an oxide of oxygen having the formula O_2,O. We shall not pretend to criticize this hypothesis. We refer to it here, partly because M. Soret has attempted to determine the density of ozone, and he finds his experiments confirm the view that three volumes of oxygen are condensed to two. He has discovered that oil of turpentine so acts upon ozonized oxygen as to cause the volume of the gas to diminish, instead of this remaining unchanged, as when iodide of potassium acts upon it. He concludes from this that iodide of potassium decomposes this *compound oxygen*, or ozone, and

absorbs part, while turpentine absorbs it wholly. Granting the truth of this conclusion, our readers will at once understand that if, as in the experiments of M. Soret, two measured quantities of the same ozonized oxygen are taken, and the one acted upon by turpentine and the other by heat, that the volume of oxygen equal to the ozonized gas will be learned from the latter action, and the quantity of unchanged oxygen in a given bulk of the gas from the former. The difference between the volume of the original oxygen and that of the unchanged oxygen will give the quantity converted into ozone; the diminution in the bulk of the ozonized gas caused by turpentine will give the volume of the ozone absorbed by it. M. Soret found in this way that the volume of the ozone absorbed by the oil of turpentine was produced from a volume almost half as great again of oxygen. Hence he concludes that the density of ozone is half as great again as that of oxygen.

We have so much more to say about ozone, more especially as regards the late controversy as to its existence or not in the atmosphere, that we must reserve this for another article.—*Med. Times and Gazette*, April 7, 1866.

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Mortality of London.—The mortality of the metropolis continues to be greatly beyond the ordinary average. In the week ended Saturday, June 9, the number of deaths was 1313, the average of the ten previous weeks being 1087. Measles, scarlatina, whooping-cough, typhus, and diarrhœa continue to be unusually fatal. Four fatal carriage accidents in the street are registered, and three deaths from cholera.—*Lancet*, June 16, 1866.

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Sickness in the Prussian and Austrian Armies.—The cholera has made its appearance at Altenburg, a town in Prussia. The right flank of the Prussian army being in cantonments near to Altenburg, the medical officers have taken all precautions should it spread to the troops. Other descriptions of sickness are very prevalent in the Prussian army. One thousand sick soldiers have already been sent back to Berlin; and it is stated that illness reduces the effective men one per cent. a day. Typhus has made its appearance in the Austrian army.—*Ibid.*

Annual Prizes of the Imperial Academy of Medicine.—These were announced on the 12th December last. The Academy prize of 1000 *francs* was adjudged to Dr. Martin, its subject being Traumatic Paralysis. Baron Portal's prize of 1000 *francs*, "On the Specific Anatomical Characters, if there be any, of Cancer," was gained by M. Cornil. There were six competitors for Madame de Civrieux's prize of 1000 *francs*; the question being, "The Relations between General Paralysis and Madness." M. Magnan took the prize. Capuron's prize of a like value, "the Pulse in the Puerperal State," was not adjudged. An encouragement, however, of 600 *francs* was given to M. Hemey, one of three competitors. Baron Barbier's impossible prize of 8000 *francs*, for a cure of incurable diseases, found seven candidates. A prize of 7000 *francs* was adjudged, as the nearest approach to the programme, to M. Chassaignac, as author of "Ecrasement Linéaire." M. Amussat's prize of 2000 *francs* found four candidates, but no takers; but recompenses were given to two of them. Eight works were sent in for Godard's prize of 1000 *francs*; but the Academy gave only two recompenses.—*Brit. Med. Journ.*, Dec. 23, 1865.

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Treatment of Acute Rheumatism with Blisters.—The *Weiner Medizin Wochenschrift* says, that the method of treating acute rheumatism with blister laid on the inflamed joints was first practised by Dr. Dechilly, of Vaucouleurs; and that in 1850 he communicated a paper on the subject to the Paris Academy of Medicine, through Martin Solon.—*Brit. Med. Journ.*, April 7, 1866.

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Obituary Record.—Died, At Tunbridge Wells, on Feb. 11, 1866, W. T. Brande, Esq., F. R. S., aged 81. Dr. B. early in life devoted himself to chemical studies, and was for some time assistant and afterwards the successor of Sir Humphry Davy as Professor of Chemistry to the Royal Institution of Great Britain. He was a voluminous writer.

—— At Jaffa, whither he had gone on one of those missions of love and mercy in which he delighted, on the 5th of April, Thomas Hodgkin, aged 68. Dr. H. was a physician of great talent, was a fine scholar, an accomplished linguist, and a warm hearted philanthropist.

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The illustrations form a novel feature in the work. The lithographic plates are all original, and to insure their absolute accuracy they have all been copied from photographs taken expressly for the purpose. In ordinary obstetrical plates, the positions of the fœtus are represented by diagrams or sections of the patient, which are of course purely imaginary, and their correctness is scarcely more than a matter of chance with the artist. Their beauty as pictures is thereby increased without corresponding utility to the student, as in practice he must for the most part depend for his diagnosis upon the relative positions of the fœtal skull and the pelvic bones of the mother. It is, therefore, desirable that the points upon which he is in future to rely should form the basis of his instruction, and consequently in the preparation of these illustrations the skeleton has alone been used, and the aid of photography invoked, by which a series of representations has been secured of the strictest and most rigid accuracy. It is easy to recognize the value thus added to the very full details on the subject of the MECHANISM OF LABOR with which the work abounds.

It may be added that no pains or expense have been spared to render the mechanical execution of the volume worthy in every respect of the character and value of the teachings it contains.

Dr. Hodge having been engaged for thirty-one years in the teaching of Obstetrics, has very justly thought that the results of his large experience and reflections might be of advantage to the profession. These he has therefore communicated in a handsome, well illustrated volume. An excellent text-book; while he shows that in the management of parturient women he has been guided quite as much by his personal experience as by the teachings of other men. A valuable contribution to medical literature. It gives evidence of very hard work, and it shows that Dr. Hodge may say, in the words of Baudelocque, "Though the reading of authors has been of great use to me, it will be found that the study of nature has been of much more."—*London Lancet*, Aug. 20, 1864.

The work of Dr. Hodge is in the highest degree creditable to its author, and confers no trifling honor upon the school whose chair of Obstetrics he so long and so ably filled. It cannot fail to become, at least with American practitioners, a standard authority; the author being as much distinguished for his intimate acquaintance with his subject, in all its details; his long experience and admirable skill in the practice of Obstetrics; his entire accuracy and perfect faithfulness in the report of his experience—in its bearing, especially, upon every unsettled question, whether relating to the science or the art of Midwifery. They who shall rise from a careful study of the mechanism of labor as described by Dr. Hodge in the work before us without clear and exact views in regard to it, will scarcely be able to master the subject after the most careful demonstration of it by the most accomplished teacher. It constitutes, very certainly, one of the fullest and most complete treatises on the principles and practice of Obstetrics that has yet appeared in either Europe or America; and we may safely add, the most reliable. On whatever question in midwifery the practitioner may consult it, he will find always the needed information, and may repose the fullest confidence in following it that he will not be led into grievous error.—*Amer. Med. Journal*, July, 1864.

Great labor has been bestowed upon the preparation, and great expense incurred in the publication of this work. It is astonishing that such an extensive and complete treatise upon any branch of medical practice should appear at such a time, and shows that the medical profession of America are anxious to be in possession of all that is known upon the subject. We have no work in our language so extensive and complete upon the art and practice of Obstetrics; and though several works of great merit have appeared within the last few years, still, no medical library can be considered complete without this volume.

The illustrations are numerous and complete; as an illustrated work, it is superior to any which has appeared. We should be glad to give a list of the subjects represented, but suffice it to say that everything desirable has been faithfully and naturally represented by lithographic plates, prepared with great accuracy and care. On this account, as a text-book for the student and young practitioner, it is of incomparable value.—*Buffalo Med. and Surg. Journal*, July, 1864.

More time than we have had at our disposal since we received the great work of Dr. Hodge is necessary to do it justice. It is undoubtedly by far the most original, complete, and carefully composed treatise on the principles and practice of Obstetrics which has ever been issued from the American press.—*Pacific Med. and Surg. Journal*, July, 1864.

The work is published in quarto form. A leading feature will strike the reader in the lithographic figures from original photographs, which illustrate more perfectly than the ordinary wood-cuts ever did, the anatomy of the parts involved, and the mechanism of labor. The mechanical execution throughout is fully equal to the best work, for which the enterprising publishers are so justly celebrated.

We have examined Professor Hodge's work with great satisfaction; every topic is elaborated most fully. The views of the author are comprehensive, and concisely stated. The rules of practice are judicious, and will enable the practitioner to meet every emergency of obstetric complication with confidence. —*Chicago Med. Journal*, Aug. 1864.

HENRY C. LEA, Philadelphia.

THE MEDICAL NEWS AND LIBRARY.

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JONES ON FUNCTIONAL NERVOUS DISORDERS, 12 PAGES.

CHOLERA.

Cholera.—In our last number we stated that it was upon the alimentary canal that the cause of cholera exerted its principal force, and we shall now adduce the evidence which has led us to this conclusion. The symptoms of the disease and post-mortem appearances both sustain this view.

Dr. Goodeve, in his recent excellent article on cholera (*A System of Medicine*, edited by Dr. Reynolds, p. 126), says: "Typical epidemic cholera is characterized, in its developed stages, by vomiting and purging of watery fluid; by rapidly causing a state of the body called collapse, in which there is extreme depression or diminution of nearly all the functions of life; by terminating in death, often within twenty-four hours from the first symptoms of the disease, or in healthy reaction, or in various dangerous sequelæ, mostly of a typhoid nature." Further he states (*op. cit.*, p. 149): "In the *beginning* of an attack the most prominent symptoms are disturbances of the stomach and bowels. Then, in swift succession, though not necessarily in that order, the circulatory, respiratory, muscular, and nervous systems suffer. Then in severe cases ensues extreme depression of all the functions of life, which often terminates in death."

Dr. John Macpherson, late Deputy-Inspector-General of Hospitals, H. M. Bengal Army, who, like Prof. Goodeve, has had large experience in the cholera in India, says ("Cholera in its Home," London, 1866): "An attack of cholera sometimes comes on suddenly, without warning. Oftener there has been more or less discomfort for a day or two, with some diarrhœa, to which, if severe, the name cholerine has been given in France; this is the *early* stage of the disease." * * * "If the premonitory stage is passed or has been wanting, the patient next evacuates the contents of his stomach by vomiting, and then goes on vomiting a watery fluid with

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white flakes in it, and rejects almost instantaneously everything he swallows. Enormous alvine evacuations take place simultaneously with, or often precede the vomiting. They empty the contents of the intestine, and are at first yellow, but soon cease to be so, and present the character known by the name of rice-water motions; they succeed each other with great rapidity, and their smell is characteristic. There is an inexpressible feeling of faintness; the pulse gets accelerated and rises to 120 beats; its strength diminishes in proportion to its rapidity; the beating of the heart becomes weaker; the respiration is anxious and accelerated; the patient complains of dyspnœa, *though examination of the chest shows only altered intensity of sounds.* The voice becomes feeble; it has a peculiar sound which once heard can never be mistaken; there may be swimming of the head or ringing in the ears, incessant restlessness and jactitation of the limbs. Syncope is not common. Painful cramps are felt in the arms, the fingers, and especially the calves of the legs. By this time the patient is so weakened that he must lie down. The face expresses the greatest suffering and anxiety, the features are pinched and shrivelled, and the eyes hollow, with black circles round them. As the disease runs on, the body gets cold, the face often becomes bluish, the fingers become of the same colour, and more especially the nails, while the skin looks as if it had been macerated in water. If you pinch the skin, it retains the impression a long time; all elasticity is gone. The whole body usually becomes thinner from the drain of fluid from the cellular tissue; cold sweats break out; the secretion of bile and of urine is suspended; the urine, from the commencement, has been scanty, and contains albumen.

"In some rare cases the patient remains twenty to thirty hours in this state, and then reaction sets in."

The *respiration* is usually much disturbed and laborious, in some instances so distressing that it could only be compared to the most violent attacks of asthma. The air expired by patients who present the external phenomena of asphyxia contains much less than the usual quantity of carbonic acid, according to Dr. Davy only one-fourth or one-third;[1] and it would appear from the experiments of Dr. Clanny,[1] MM. Guèneau de Mussey,[2] Rayer, and M. Barruel, that the amount is sometimes even less. The last-named gentleman says that he has ascertained that during complete collapse no change was effected in the chemical composition of the air respired—it contained no carbonic acid, and not an atom of oxygen had been absorbed.[3]

The *secretion of urine* is usually lessened as the disease proceeds, and ultimately, in most instances, becomes entirely suppressed.

We have met with two instances, however, in which the secretion of urine was excessive, amounting to almost complete diabetes, and Dr. O'Shaughnessy has seen similar cases. The secretion from the intestinal mucous membrane is here replaced by an increased action of the kidneys. In neither of the instances in which we have observed this form, was there complete collapse, but the debility caused by the discharge was very great—there was extreme lightness of the head, and giddiness, which was aggravated after each discharge of urine. There was also slight diarrhœa, but not the profuse serous evacuation from the bowels observed in other cases.

Purging is the most constant and among the earliest symptoms of cholera.

Dr. Lawrie in his report states, that "of all the patients admitted into the Albion Street Cholera Hospital, Glasgow, there has not been one in whom the disease did not begin in the bowels and stomach. In the vast majority, purging was either premonitory, or the first symptom. Some there were who said that nausea and vomiting first annoyed them, but all had purging early in the disease. In some there was no vomiting; in others no cramps; in a few the pulse, capillary circulation, and respiration were good; but all, to a man, had a discharge of characteristic watery fluid from the bowels. So much am I convinced of this, that I now consider watery purging essential to cholera, and have no hesitation, in my own practice, in pronouncing any disease not cholera in which this symptom is absent. The purging is usually unattended by griping pains. In every case which I have had an opportunity of watching from its commencement, the failure of

[1] Ed. Med. and Surg. Journal.

[1] Cholera of Sunderland.
[2] Gaz. Méd. de Paris, T. iii. pp. 219, 278.
[3] Archives Générales, April, 1832, p. 605.

the pulse, capillary circulation, and other symptoms of collapse, have been in marked proportion to the amount of fluid discharged, the rapidity of its discharge, and its approach to water in colour, consistence, and smell. I know no symptom by which a common diarrhœa or disordered stomach and bowels can be distinguished from the early stage of cholera."—*Glasgow Journal.*

In a few rare cases, nevertheless, purging has been absent; but in such cases the intestines have been found on examination *filled* with the rice-water fluid. We have seen one instance of this; the disease was there complicated with strangulated hernia, and the passage completely obstructed—the bowels were prodigiously distended with the fluid alluded to.

What is termed *cholera sicca* is spoken of by many writers, but we believe such cases to be apocryphal. Dr. John Macpherson (*op. cit.*, p. 57) says: "I have often heard of them, but they have never occurred in my own tolerably extensive experience, spread over twenty-four years. I never knew a case in which there was not some vomiting or purging."

Dr. Gull, in his able report (p. 130), says: "The cholera poison is not known to produce its fatal effects without the characteristic affection of the intestines. Cholera sicca, in a strict sense, does not occur, for although the disease may be fatal without any evacuation, the intestines after death in such cases have been found to contain rice water fluid."

The symptoms of cholera have been so often and fully described that it is unnecessary to dwell further on them; enough has been related to demonstrate that the alimentary canal exhibits the *earliest* and *most serious* manifestations of disease.

Let us now inquire whether the morbid lesions found after death lead to the same conclusion.

There is a remarkable uniformity in the statements of observers in regard to the pathological appearances met with in those who have died of cholera. We have in our library over one hundred and fifty works on the disease, and an examination of them has fully satisfied us, as has also our personal observation, that the only differences noticed result either from accidental complications or from the period at which death takes place—whether it occurs early or later in the algide period, or after reaction.

No constant or marked lesions are found in the brain or nervous system, lungs, heart, liver, spleen, kidneys, or genital organs.

Brain and Nervous System.—Virchow met with no structural changes in the brain and spinal cord; Reinhardt and Leubuscher report the cerebral substance to be healthy, as do most other writers; the sinuses and veins are more or less loaded with dark blood, and the brain substance often presents on section numerous dark red points from fulness of the smaller veins.

The nerves which go off from the brain, medulla oblongata, and spinal marrow, present no alteration at their origin. M. Bouillaud says that he has recently dissected the nerves of the lower extremities, in a patient who had experienced violent cramps, and that he found them in a state of the most perfect integrity.[1]

The phenomenon of cholera appearing to indicate a suspension of function in the *ganglionary nervous system*, many careful investigations have been instituted for the purpose of determining the condition of this system after death. M. Delpech asserts that he found in his examinations evident traces in the semilunar ganglions of the physiological alterations they had experienced; that they were often enlarged, red, more or less injected, and sometimes remarkably softened, and that the blood with which they were injected was red, whilst the blood in the capillary system over all the rest of the body was black. The solar plexus, he says further, was always in a more or less abnormal condition, but always recognizable by the size of the nerves which compose them, often by the red injection of their neurilemma, and sometimes even by the softening of the nerves which form them, so that they break under the slightest effort, or even the least pressure.[2] The researches of Mr. Lizars, of Edinburgh, and M. Halma Gand, appear to sustain this statement; but the investigations of MM. Gendrin, Bouillaud, Louis, Andral, and indeed of all the Parisian pathologists, are entirely opposed to it.

M. Bouillaud says that the important part which the semilunar ganglion and the plexuses which originate from it are made to perform in cholera, induced him to atten-

[1] Traité du Cholera-Morbus de Paris, &c., p. 266.
[2] Etude du Cholera-Morbus. Par le Professor J. Delpech. Paris, 1852. Pp. 197, 198.

tively examine these parts in almost all the choleraics who died in his hospital practice, and he declares that the ganglionic nervous system did not in a single case present any lesions of structure. In some cases, the ganglions and the plexuses had preserved their normal white or grayish-white tint. But most frequently, he observes—

"The semilunar and cervical ganglions, like many other organs, were of a rose or violet tint, with or without manifest injection; this slight lesion of colour was more evident on the exterior than in the interior of the ganglions."

M. Gendrin found the semilunar ganglions and all the ganglions and nervous plexuses perfectly healthy.

"Their tissue has," he says, "its natural colour and density, if we take care to dissect these so as to prevent the sanguineous imbibition which results from the effusion of blood from the veins which are necessarily divided in the examination. It is however observed, that the nervous ganglions in the bodies of choleraic subjects often present a reddish tint which is often found after many diseases, and constantly in asphyxia."

Lungs.—In a majority of cases fatal in the algide stage, Dr. Gull, in his admirable report (*Report on the Morbid Anatomy, Pathology, and Treatment of Epidemic Cholera*, made to the Royal College of Physicians, London, 1854), states no other morbid change existed in the lungs than engorgement of the lower and posterior parts of these organs with dark blood. In some instances this was so complete as to cause portions of the pulmonary tissue to sink in water. The anterior and superior parts were drier than natural.

Virchow, Briquet, and Mignot, and most observers, found the lungs usually collapsed to the spine and flaccid; the anterior portions free from engorgement; Leudet states "the lungs are commonly healthy;" there is "frequently hypostatic congestion."

Heart.—The *heart*, *arteries*, and *veins*, except in cases of complication, offer no notable lesion. The arteries are nearly empty; in the larger ones, and in places only, a dark, imperfectly coagulated blood, precisely similar to that found in the veins, is met with. The venous system contains a blackish, viscid, semi-coagulated blood, somewhat resembling blackberry jelly. The nearer the vessels are to the heart the greater is the quantity of this black blood which they contain; it is especially considerable in the superior vena cava, the subclavians, the internal jugular, and the vena azygos. The heart, especially its right cavities, are generally gorged with blood similar to that found in the veins. Its proper veins are exceedingly distended with the same kind of blood.

Reinhardt and Leubuscher found in those who died in the algide stage the muscular substance firm, well contracted, and of a dull red colour. The right auricle and ventricle distended with blood; the left contained in proportion but a small quantity.

Liver.—After death, in the algide stage, according to Virchow, "the liver was but little altered; it was for the most part pale and flabby, only the large vessels contained blood. Not rarely the volume of the organ appeared to be diminished. The parenchyma was deeply coloured with bile."

Gull, Briquet and Mignot, Reinhardt and Leubuscher, with most observers, state that the gall-bladder is usually distended with bile, differing little from that usually found in it, often viscid, but sometimes more watery than natural; the gall-ducts not obviously affected.

The spleen is usually small, with no obvious change in the tissue, beyond that arising from want of blood, giving its capsule a wrinkled appearance. (Gull, Niemeyer, Leudet.)

The *kidneys* are unaltered in their tissue, but exhibit on section venous hyperæmia. The secreting structure rarely presents any obvious morbid change, but the urine is sometimes albuminous before its suppression. The contents of the pelvis are mostly turbid, with exfoliated epithelium and free nuclei. (Gull, Virchow, &c.)

The *urinary bladder* is, in the algide stage, mostly contracted and empty; sometimes hyperæmic, especially about the neck, and covered with a layer of exfoliated epithelium. (Gull, Briquet, and Mignot.)

The genital organs present no constant morbid phenomena. (Virchow, Leudet, Gull.)

Alimentary Canal.—Through the *whole extent of the alimentary tube*, from the pharynx to the anus, there is *constantly* found after death, marked lesions, varying only according to the period at which the patient has succumbed. When death occurs early, either from feebleness of constitution in the

victim, or from the violence of the attack, the mucous membrane is found in a state of hyperæmia to a greater or less extent, with punctated or arborescent redness and with enlargement of all the mucous follicles.

If death occurs later, the hyperæmia has often disappeared, the mucous membrane has become pallid, softened, and denuded to a greater or less extent of its epithelium, as first pointed out by the late Prof. Horner, of the University of Pennsylvania, and since confirmed by many other observers. It is the debris of the epithelium which constitutes the flocculi so characteristic of cholera evacuations.

Dr. Charles T. Jackson, who attended the pathological examinations of Professor Wagner at Vienna, states that "the uvula, tonsils, and pharynx were covered with granulations, as also the base of the tongue." "These granulations," he adds, "vary in size from that of a pepper-corn to that of a pea, and are probably the mucous follicles altered by inflammation." Mr. Fergus, who attended the dissection of two hundred cholera subjects by Professor Wagner, states that the mucous membrane of the pharynx was often of a deep purple from injection of its vessels. "The mucous membrane," he adds, "seemed always, in acute cases, as if swollen in its whole extent; from place to place it was a bright red from numerous vessels."—*Lancet*, June, 1832.

The mucous membrane of the stomach is covered with a tenacious mucus, largely mixed with exfoliated epithelium, and over its whole circumference it presents a multitude of small, white granulations, slightly grayish, having a very regular hemispherical projection. These granulations have no regular arrangement, and everywhere disseminated, they are still more numerous in the duodenum and jejunum than in the stomach. M. Serres says that they are so numerous and developed in the small intestines that the whole mucous membrane seems as if made up by them;[1] their number decreases towards the large intestines. On dissection these granulations are found to be the follicles of Brunner distended by a white, turbid fluid, and three times their natural size. This development of the follicles of the mucous membrane appears to be constantly met with in the early stages of the disease, even when death occurs within twenty-four hours.

"The isolated follicles, or the glands of Brunner," says M. Bouillaud, "are those particularly which we observe more or less tumefied and developed; nevertheless it is not uncommon to meet at the same time that lesion in the plates of Peyer or the clustered follicles. This hypertrophy, this species of erection of the follicles of the mucous membrane of the digestive tube, prevails sometimes through the whole extent of this immense membrane; and this gastro-intestinal eruption, sometimes distinct, at others confluent, imitates to a certain extent the variolous eruption in its first stage. The number of follicles developed, when the eruption is confluent, is truly incalculable. We will only say, that any one who has seen this kind of eruption, will not consider the calculation of M. Lélut, by which the whole number of follicles in the alimentary mucous membrane is estimated at forty-two thousand, to be exaggerated. The size of these follicles thus tumefied varies from that of a small millet-seed to that of a hemp-seed. Their form is rounded and granular. Many of them have a blackish point at their centre. There are some which do not offer this character, and MM. Serres and Nonat, who have published some researches of great interest on the subject under consideration, think, as is known, that these granulations are not follicles, but *intestinal papillæ* in a state of tumefaction. We have studied with some care this point of pathological anatomy; and we are certain that an immense majority of the granulations with which the mucous membrane is covered, are really enlarged follicles, but we will not affirm that those on the summit of which there is no perceptible black point, and which marks the opening of follicles, are actually the same. The colour of follicular granulations is commonly a grayish-white; at their basis a more or less considerable injection is frequently met with."

Mr. Fergus, to whom we have already referred, states, that in those patients who "had died after a few hours' illness, the glands of the pharynx and back of the mouth, those of the intestines, from the cardia to the anus, were much, but simply, enlarged; those of Brunner were elevated above, and stood clear out from the mucous membrane; those of Peyer were raised

[1] Gaz. Méd. de Paris, tom. iii. p. 206.

about half a line or a line, and their surface was uneven. They were always of a pale colour, and of a uniform texture when cut into; they stood in no relation whatever to those parts of the intestine where congestion had taken place; but they seemed to have some connection with the production of the thick mucus, because the glands were most developed in those subjects and in those places where this mucus was most abundant. When the contents of the canal were more fluid, these glands were no longer so distinct."—*Lancet*, June, 1832

Incipient ulcerations are also occasionally met with in the intestinal follicles.

The whole intestinal tube is generally more or less distended with a whitish, turbid fluid similar to that discharged by vomiting and stool, and which fluid is pathognomonic of cholera. In the stomach, besides the choleraic fluid, there is found usually a very considerable quantity of glairy mucus, more or less adherent to the mucous membrane; sometimes in place of this a layer of creamy matter is found similar to that hereafter to be noticed as met with in the intestines. M. Bouillaud says that he has several times seen in the stomach a yellowish or greenish bile.

Among the pathological changes found on post-mortem examination, that in the *blood* is most striking. Its consistence is much greater than normal, and its colour very dark. Its specific gravity was found by Dr. Garrod to be from 1068 to 1081, while the maximum of healthy blood, according to Becquerel and Rodier, is 1062 (*London Jour. Med.*, vol. i. p. 409.) Reinhardt and Leubuscher observe "the blood contained in the cavities of the heart was in the majority of cases coagulated into a dark homogeneous mass, with fibrinous coagula extending into the large vessels. Virchow's statement that these coagula contained a large number of colourless corpuscles, was confirmed by our own observations. The large venous trunks, and the veins of individual organs, were full of blood, whilst the arteries and capillaries were for the most part empty. This fulness of the veins was more marked in cases where death followed quickly upon the commencement of reaction after the cold stage."

The investigations of Dr. Garrod (*op. cit.*) on the blood have led him to the following conclusions:—

"1. That in cholera the physical characters of the blood are altered, and its tendency is to become thicker, tar-like, and less coagulable.

"2. That the proportion of water is much diminished.

"3. That the specific gravity of the serum is very high, which is due to the increase of the solid portion of the serum, and especially of the albumen; and that this fluid also tends to become less alkaline in its reaction.

"4. That with regard to the salts of the serum, some doubt exists as to their excessive diminution.

"5. That urea sometimes exists in cholera blood."

The analyses of Professor Hermann, of Moscow, of MM. Rose and Wittflock, of Berlin, and of Dr. Clanny, of Sunderland, also show that there is a great deficiency of water in cholera blood.

The experiments of Dr. Rayer show that the serum of cholera blood is less alkaline than that of healthy blood;[1] and Dr. O'Shaughnessy states that it is nearly or entirely deficient in its alkaline ingredients. "Of the free alkali contained in healthy serum," he says, "not a particle is present in some cholera cases, and barely a trace in others."[2] M. Lassaigne, of Paris, in his chemical examination of choleraic blood, found it to contain only a fourteenth of the usual quantity of fibrin.[3]

This change in the condition of the blood does not occur however early in the disease. This has been most conclusively shown by Schmidt,[4] and also by Dr. O'Shaughnessy, who availed himself of the second eruption of cholera in London, to repeat his chemical inquiries relative to this disease, on a most extensive scale, and with a view, if possible, to decide the important question, whether the alteration of the blood be primary or secondary, and to ascertain what are the conditions of the blood in the several stages of the disease. His investigations show, that—

"1st, in the *premonitory* symptoms, no alteration of the blood exists; 2d, in the cases in which the evacuations are trivial, and *cramps* form the prominent symptoms, the blood is also unaltered; 3d, the altera-

[1] Gaz. Méd., iii. p. 347.
[2] Lancet, Dec. 31, 1831.
[3] Traité Pratique, &c. du Cholera-Morbus, par J. Bouillaud, p. 224, note.
[4] Characteristik der Epidemischen Cholera. Leipsic, 1850.

tion of the blood consisting in loss of water and saline matter, only occurs in the collapse cases *preceded* by excessive rice-water evacuations; 4th, this alteration of the blood gradually disappears, or increases in the fever stage, according to the aggravation or amelioration of the symptoms."—*Lancet*, Aug. 1832

Dr. Clanny also found the quantity of water in the blood scarcely at all diminished in the *incipient* stage of cholera, and Mr. Prater says, that in four cases in which he examined the blood in this stage, that fluid seemed to redden, contract, and to contain the ordinary proportion of water. The change in the blood then *occurs late* in the order of symptoms.

The character of the *evacuations* in cholera is deserving of attention. The following are the results obtained by Dr. Clanny, from an analysis of the dejected fluid: Water, 989; fibrin, 6; carbonate of soda, 3; animal extractive, 2; total, 1,000. (*Op. cit.*, p. 112.)

According to Dr. O'Shaughnessy, "all the salts deficient in the blood are present in large quantities in the peculiar white dejected matters."[1] MM. Rose and Wittflock, of Berlin, and Dr. Kirk, of Greenoch, also state the dejections to be alkaline. The existence of fibrin in the dejections is shown also by the analyses of Dr. Christie in India,[2] and Dr. O'Shaughnessy.[3]

The greatest quantitative loss, as observed by Dr. Goodeve (*loc. cit.*, p. 160), "which the blood suffers is in its watery element. For every 100 ounces passed in the fluid evacuation stage, the loss to the blood is in water 98 to 99 ounces, and of salts nearly or about one ounce. The salts exuded are the chlorides of sodium and potassium, phosphate of soda, carbonate and sulphate of soda, bearing a proportion of seven or eight parts in 1,000, a proportion nearly resembling the quantity in the blood within the vessels. The earthy phosphates do not pass through the mucous membrane as in health."

"It will be seen," he further observes, "that the intestinal surface removes from the blood a large quantity of water, a small quantity of animal matter, and much saline matter; doubtless causing great change in the blood and in the behaviour of the different elements of the blood to each other."

[1] Lancet, Dec. 31, 1831.
[2] Observations on Cholera, p. 52.
[3] On the Chemical Pathology of Cholera.

The influence which the water in the organism exercises on physiological phenomena, and the prejudicial results which follow from its loss, is not generally fully appreciated. Robin and Verdeil have shown that water is an anatomical element of the system. Bernard asserts it to be an essential component of all living organisms—that it is the necessary vehicle for the materials which enter into the double movement of nutrition and excretion, *without which life cannot be maintained.* "Independently of their special properties," M. Bernard remarks, "the organic fluids are allied by a general character; all owe their first physiological importance to the water they contain; before being useful in consequence of the substances which they hold in solution or in suspension, they are first useful as fluids."

There is little ground for surprise, then, that the loss by the blood, in cholera, of so large a portion of its most important element should be followed by disastrous consequences—that life cannot, under these circumstances, be any longer maintained. The condition is worse than after hemorrhage, for in the latter the blood in the system, though deficient in quantity, is normal in quality, while in cholera the blood is no longer suitable for the physiological functions of maintaining life.

The chemistry of the vomited matters has been less investigated.

A question which would have been regarded as of more importance formerly than at the present time, is, whether the secretions into the intestinal canal are the result of inflammatory action, or a passive serous hemorrhage, or osmosis. Dr. Gall (*op cit.*, p. 118) seems to us to take the correct view of the subject, in stating that "an examination of the fluids effused from the mucous membrane gives no evidence of active plasmatic changes taking place in them. On the contrary, the large amount of fluid thrown out, its low specific gravity, and its other physical characters, indicate an almost passive exosmosis, as through a dead membrane."

A study of the symptoms of cholera seems to us to show that the essential phenomena of the disease, those, alone, always present, are uneasy feelings of some description in the abdomen, with the discharge by vomiting or stool of a thin fluid; and that when the disease runs a fatal

course, the only symptoms constantly superadded are, alteration in the blood, sinking of the circulation, coldness and blueness of the surface, and lessening or suppression of most of the secretions. In its simplest form, then, cholera consists in a disorder of the digestive tube, with discharge of a thin rice-water like fluid. Let us now inquire how the phenomena we have indicated as superadded, in fatal cases, result from this primary disorder of the alimentary canal.

The thickening of the blood is at once accounted for by the profuse evacuations into the digestive canal, which chemical analysis has shown to consist principally of water, and as all the secretions are derived from the blood, this fluid, thus deprived of its water, necessarily becomes thickened.

The alteration of the colour of the blood arises to a certain extent, probably, from its imperfect circulation, since it has been shown by Professor Hassenfratz,[1] that arterial blood soon acquires the characters of venous, if it be not kept in constant contact with the air, and Mr. Prater says that he is quite satisfied from his own experiments of the correctness of this statement. The main cause of the blackness of the arterial blood would, however, appear to be an incapacity of reddening by the contact of oxygen arising from the loss of its saline matter and serum. Messrs. Stevens, Rayer, and Prater have found that it never fails to redden immediately on immersion in saline solutions.

The sinking of the circulation arises from two causes: 1st. The choleraic evacuations suddenly and largely diminishing the amount of circulatory fluid, must, like profuse hemorrhages, weaken the action of the heart; and 2d. The thickening and viscidity of the blood caused by the abstraction of its fluid portion presents a mechanical obstacle to its circulation.

[1] Annales de Chimie, tom. ix.

[2] The debility occasioned by the watery evacuations from the bowels, the thickening of the blood arising from the same cause, and the mechanical obstacle which this condition of the blood offers to its circulation, are especially noticed by Morgagni in his invaluable work on the seats and causes of diseases. His own case, which he denominates a serous diarrhœa, and others of the character to which he allludes, were essentially the disease under consideration. We recommend to the attention of the profession that portion of his thirty-first letter in Book III., which treats of "Fluxes from the belly without blood."

The coldness of the body is a necessary consequence of the suspension of the circulation, and from the same circumstances, joined to the black colour of the blood, arises the livid or dark tint of certain portions of the body.

The deficiency of water in the blood, and also the law of the animal economy that the augmentation of one secretion produces a proportional diminution in others, explains the diminution or suppression of the urine and various other secretions.

Such seem to us, as indicated by the symptoms, to be the series, relation, and physiological explanation of the essential symptoms of cholera.

The post-mortem appearances concur fully with the symptoms during life in showing the essential lesion in cholera—the one never absent in the disease—to be an effusion upon the inner surface of the intestinal tube of a serous fluid, containing the debris of exfoliated epithelium, which is afterwards rejected by vomiting or purging; and that this fluid is the product of an alteration equally constant, at least in its early stage, which alteration consists in the development of the secretory follicles disseminated over the digestive tube.

The exaggerated secretion of the intestinal follicles must have been necessarily preceded by an afflux towards these follicles, and it must also be necessarily accompanied by that state of turgescence of the secretory organs accompanying all augmented secretions—an active state to which Bordeu has called the attention of physicians, and of which post-mortem examinations have always shown the traces when death has not occurred too late.

This fluxion towards the follicles of the digestive tube is among the earliest effects of the cause, whatever it may be, productive of cholera, and is manifestly the result of the well-known law, *ubi irritatio, ibi fluxus*. Starting from this orgasm of the follicles alluded to, we have little difficulty in showing how the phenomena of cholera follow as natural results.

These follicles gradually increase in size under the influence of this fluxion to them, their secretions are augmented, and thus is produced the serous diarrhœa which constitutes the initiatory stage of cholera. As soon as the secretion is increased in the whole digestive tube, to a sufficient extent to quickly substract from the blood a large

portion of its elements, the choleraic symptoms appear. Previous to this, the loss which the blood suffers is slight, and absorption repairs it continually. Thus, the intensity of the general symptoms is, *cæteris paribus*, in proportion to the *suddenness* of the serous secretions. A person in whom these secretions occur slowly, suffers less at the end of three or four days, although he may have lost a large quantity of serum, than another would at the termination of an hour, in whom the deperdition has taken place suddenly, even though he had lost less serum. For the same reason the disease becomes very speedily fatal in those who have scarcely any discharge by vomiting or stool, but whose alimentary tube is suddenly filled by the product of the secretion, and this especially in persons whose vital powers are enfeebled by previous disease, irregular habits, &c.

Debility, coldness of the extremities, feebleness of the pulse, oppressed respiration, and syncope, are the immediate results of all sudden losses of blood; it is quite intelligible, then, how they occur in a disease in which the blood is suddenly deprived of its most essential elements;[1] they also occur in excessive serous diarrhœas, and in ordinary cholera.

The blood deprived of its water by the profuse secretions into the bowels, becomes thickened; and in proportion as it is rendered thick and viscid, and the propulsive power of the heart is enfeebled by the excessive choleraic secretion, will the circulation be diminished. The diminution of the circulation through the lungs causes derangement of respiration—the blood deprived of its saline matter by the secretions in the bowels, the oxygen of the air cannot effect in it those changes which this agent ordinarily produces upon it in the lungs;[2] the proper changes of the blood in the lungs being thus imperfectly and ultimately not at all effected, the portion of this fluid which reaches the left side of the heart is similar to that sent to the lungs by the right side of that organ. The suspension of the general circulation and the dark colour of the blood produce a blueness or bronze colour in those parts in which the thinness of the skin permits the colour of the blood to be partially seen—as occurs in asphyxia. The circulation being suspended, animal heat can no longer be generated, and hence the body becomes cold. The profuse secretion into the intestinal canal is effected at the expense of the water of the blood, which creates a demand upon every part of the system which can supply this waste. Hence the muscles, cellular tissue, &c., are deprived by absorption of their watery constituents, causing a shrivelling of certain parts, as of the fingers and toes, sinking of the eyeballs, &c. This same condition is also observed in some profuse hemorrhages; our esteemed friend, the late Professor Dewees, notices it as occurring in uterine hemorrhage. Thus are the phenomena of collapse produced.

In some cases the profuse secretions from the bowels are arrested, or diminished, either spontaneously, or from the effect of remedies. So long as the profuse secretions from the bowels continue, it is impossible for the absorbents to repair the loss which the blood sustains; these evacuations being arrested, the blood is then thinned by the water taken up by the absorbents, becomes gradually fitted again for circulation in the vessels; and the addition of saline matters derived from the same source restores to that fluid its capacity to undergo the proper vital alterations in the lungs. Reaction is thus produced. The immediate result of this reaction is to repair the disorders occasioned by the intestinal secretions. The excessive secretory action of the gastro-intestinal mucous membrane ceasing, the other secretions, as those of urine, of bile, &c., are again re-established.

The difficulty to the establishment of reaction is proportional to the extent of the lesions in the gastro-intestinal mucous membrane, and to the alteration which the blood has undergone; and the evils which follow this reaction result, at least in great measure, from this change in the blood. The brain here suffers more than any other organs, except the digestive, because the venous circulation is carried on in it by a peculiar apparatus, which renders the progression of the blood slower and more difficult, and which thus easily leads to congestions. This congestion persists notwithstanding the reaction, if the viscid and semi-coagulated blood of the sinus

[1] Gendrin, p. 136.

[2] The experiments of M. Rayer and others show that the presence of salts in the serum is necessary for the blood to be oxygenizable, and consequently that the chemical phenomena of respiration may be effected.

presents an obstacle to the re-establishment of the cerebral circulation. Congestion is reproduced in the reaction, probably because while there is an augmentation of the activity of the arterial impulsion in the brain, the circulation through the sinuses is still retarded.

Such is the anatomical history of the essential lesions in cholera. It now remains for us to explain certain symptoms and lesions, which, although not essential to the disease, are nevertheless of very frequent occurrence.

The principal seat of the disease, as has been, we think, conclusively shown, is the gastro-intestinal mucous membrane. In this membrane four functions are performed, viz: 1st, secretion on its free surface (by the glands of Peyer and Brunner, and probably by its villi); 2d, nutrition (interstitial de position and removal); 3d, innervation; and 4th, absorption from its free surface. The essential lesion in cholera we have found to be that of the secretory function, productive of a great increase in secretion and an alteration in the fluid secreted; and the loss, to a greater or less extent, of the epithelium of the mucous membrane. It is rare, however, for any function of this membrane to be seriously impaired, without the others being involved to a greater or less extent in the derangement. We have therefore usually, in cholera, derangement of the nutritive function, producing thickening, softening, &c., of this membrane.

The function of innervation is also frequently deranged. This is shown by the intense heat in the epigastrium, urgent thirst, &c. When the irritation is sufficiently intense to be transmitted to the cerebro-spinal system, we have spasms of various muscles. Examples of spasms produced by irritation of the alimentary mucous membranes are furnished in convulsions so frequently caused by the presence of worms or indigestible matters, or of irritating poisons in the intestines. Or this spasm may be caused by the depraved blood supplied to the brain and nervous system.

The function of absorption is lessened and probably absolutely suspended during profound collapse. Extract of belladonna has been given during this condition to the extent of 22 grains without any effect being observed from it. (Clark, in *Med. Rec.*, p. 732) The excessive loss of water by the blood being no longer repaired by absorption, the secondary effects resulting from the change in the state of the blood ensue. When the secretions abate, or are arrested, which frequently occurs, often even in perfect collapse, the absorbents slowly supply to the blood the materials it has lost; the watery fluid it supplies renders the blood more fluid, and fit for circulation; the saline matters it supplies, restore to the blood its capacity for undergoing oxygenation. The mode in which reaction is effected, has not hitherto been explained. We have ventured to attribute it to the supply of water and saline matters to the blood, furnished by the absorbents, and we do not hesitate to believe it to be the true one. We can produce the same effect by injecting saline solution into the veins. The functions, it is known, do not all cease together, the organs die in succession. The function of absorption is among the last to die; it often continues hours after the external phenomena of life have ceased. In one specimen of blood taken from a cholera subject some time *after* death, M. Lassaigne found nearly the same quantity of serum that is contained in healthy blood.[1]

Mr. Prater says that sometimes in cholera the circulation begins after the respiration has ceased, the person being apparently dead. A remarkable case of this kind, he adds, occurred at Newcastle.[2] The increase of temperature after death is owing to the same cause; it is an attempt at reaction. We may here remark that the muscular contractions after death are to be explained on the same principle. Vitality remains in the nervous system, producing muscular contraction after the respiratory and circulatory organs have ceased to perform their functions.

Further evidence of the correctness of these views is furnished by the effects of agents whose mode of action is acknowledged to be that of irritants when applied to the mucous membrane. Thus an overdose of most of the drastic purgatives, and several of the acrid poisons, eating putrid fish, &c., produce effects strikingly analogous to the phenomena of cholera. Mr. Christie states that one of his servants took an over-dose of croton tiglium, which occasioned hypercatharsis, with mucous and se-

[1] Bouilland, Traité Pratique, &c., p. 224, note.
[2] Experimental Inquiries in Chemical Physiology, p. 249.

rous evacuations; his pulse became scarcely perceptible at the wrist; his extremities cold; his features contracted; and all the symptoms so strikingly resembled cholera, that Dr. Christie supposed him to be labouring under that disease until the case was explained. (*Op. cit.*, p. 14.) Dr. Christie produced all the symptoms of cholera in dogs by introducing tartar emetic into their stomachs; and we have seen similar effects in the human species from an over-dose of the same article. Elaterium, scammony, hellebore, and other articles of the same class, in excessive doses, often occasion a similar train of symptoms.

It is well known that the symptoms of poisoning by arsenic and other *acrid* poisons so closely resemble those of cholera, that it is often extremely difficult, and sometimes even impossible, to distinguish them. This close resemblance is pointed out in all the works on medical jurisprudence, and has been particularly noticed by Christison, one of the most authoritative writers on the subject. (*On Poisons.*)

In fact, we have, from the action of this class of poisons, vomiting and purging of a fluid similar to that discharged in cholera, spasms, darkness and coldness of the skin, feeble pulse, suppression of urine and other secretions, &c. (*Christison.*)

Finally, a confirmation of the correctness of our views is furnished by the class of persons most obnoxious to cholera. Thus we find it is individuals whose gastro-intestinal mucous membrane is in a state of excitement, or irritation, from the excessive use of spirituous drinks, from the ingestion of indigestible food, &c., who are the most frequent subjects of cholera. In such persons also the course of the disease is rapid—the primary stages are scarcely observed. The reason of all this is evident. The first effect of the choleraic poison is to irritate the digestive mucous membrane, and to establish a fluxion to it. Spirituous liquors, indigestible food, produce the same effect: their action is in the same line, then, with the agent producing cholera. Drunkards, those who indulge in indigestible aliment, then, have their gastro-intestinal mucous membrane in a state of irritation—they are in fact in a condition nearly identical with the first stage of cholera—such persons are known indeed to have habitual diarrhœa. Irritation of the digestive mucous membrane, with its consequences, an afflux of blood to the part being established, in such persons, on the addition of the influence of the cause of cholera, increased osmosis is at once induced, and the phenomena of the second and third stages of the disease promptly appear. That the disease should be generally fatal in the class of persons under notice, is not surprising; they usually fall victims to any disease with which they may be attacked.

The analysis of the symptoms, the order of their occurrence, and the post-mortem appearances—the effects of agents on the alimentary mucous membrane, whose action is known to be irritating—and various facts in the history of the disease, all tend to prove that cholera is an irritation of the gastro-intestinal mucous membrane, always directed to the secretory apparatus of this tissue, and often involving the functions of nutrition and innervation of the same tissue.

The varieties which are observed in this disease arise from the degree in which these several functions are deranged, and to the extent and the portions of the alimentary mucous membrane in which the irritation predominates. The degree to which the functions of nutrition and innervation are involved, appears in a considerable degree to be dependent on temperament. Thus it is observed that in persons of sanguineous temperament, the manifestations of increased secretion, whilst in those of nervous temperament, those of lesion of innervation, as spasms, predominate.

The peculiar fatality of this form of gastro-intestinal irritation depends upon the extent of that irritation, usually from the pharynx to the anus; and to nearly all the functions of the tissue being involved—secretion, nutrition, and innervation.

Such is the outline of what appears to us to be the true pathology of cholera, as we presented them to the Philadelphia Medical Society in the autumn of 1832, and which was published in the *Cholera Gazette* of Nov. 21, of that year. We have now reproduced it with slight alterations and additional evidence in its support. After the reflection we have since given to the subject, it still appears to us to be in entire accordance with all the facts that have been observed, to leave none of the phenomena of the disease unaccounted for, and to lead, moreover, to the only mode of treatment that can claim any success.

Dr. Johnson's Eliminative Treatment of Cholera.—In our last number, p. 103, we noticed a remark of Prof. Johnson's which we regarded as a virtual abandonment of his eliminative treatment of cholera. In a more recent article (*Med. Times and Gazette*, June 16, 1866), there is a further admission which we consider to the same effect, and shows that the Professor has been driven to great straits in defence of his doctrine. He says:—

"I am aware that many practitioners cannot think of giving a purgative to a sufferer from cholera without a feeling of dread. I am sure that this dread is mainly the result of an imperfect apprehension of what a purgative is intended to do and of what it actually does. The disease is usually attended with a profuse drain of fluid from the blood. *To increase that drain would be mischievous, and might be fatal.* A few doses of castor oil do not increase that peculiar excretion which constitutes the purging of cholera. I know that they do not, by actual observation; and if we look a little closely into the matter, we shall see that an ordinary purgative cannot have the effect which is so much dreaded."

Purgatives, then, according to Prof J., are *not really* eliminative. He may well ask, "what, then, is the object to be attained by emetics and purgatives in cholera?" "The object is," he says, "to stimulate the stomach and intestines to eject their morbid contents, which otherwise might be retained and absorbed."

This is restricting his views of elimination within very narrow limits, and castor oil is only required in those cases in which the bowel is "over-distended and paralyzed by its accumulated contents," and the "choleraic secretions are but slowly and imperfectly discharged without the aid of some artificial evacuant."

Castor oil is therefore not to be given as an eliminant to eliminate a poison from the system, but simply as an evacuant to empty the bowels of their contents when nature fails to do this, which is surely only in exceptional cases.

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Progress of Cholera.—Cholera prevails at various points along the North of France, from Penmarch (Finistère) and Nantes, in the extreme west, to Hesdin and Courcelles-Chaussey. At Amiens it has raged with great intensity. It has also broken out at Lisle. At Bordeaux several cases are reported. Some villages in the Meurthe and of Moselle have been severely visited. Cases have occurred in Paris, but it is not epidemic there.

It has invaded Holland with great intensity, prevailing in Rotterdam, La Haye, Delft, and Amsterdam.

On the 2d of May it broke out at Brussels. At Antwerp, on the 3d of July, from 40 to 50 persons died in the 24 hours.

The latest files of newspapers from the Hague give a long list of the communes in which the epidemic had appeared, and show that up to the 9th of June the attacks in them had amounted to 2,410, the deaths to 1,352. The following returns are also given from the commencement of the outbreak to the 22d of June, 1866:—

	Attacks.	Deaths.
Leyden, . .	1,021	649
The Hague, . .	362	215
Delft, . . .	542	319
Rotterdam, . .	824	503
Dordiecht, . .	346	196
Gouda, . . .	143	73
Utrecht, . .	688	382

According to the *Wiener Med. Wochenschrift* the cholera is widely spreading in Germany.

At Berlin, on July 2d, 39 cholera cases were reported, 15 of which terminated fatally. The total cases from June 16 is 129, of which 79 were fatal.

It is now epidemic in many parts of Pomerania. In Stettin, where it has assumed a threatening character, there have been since the beginning of June 537 cases and 294 deaths.

The disease is said to have broken out at St. Petersburg.

In England the disease has been imported into several ports on the east coast, and it has again appeared on the south coast. It it evidently spreading, though not yet epidemic.

In the United States cases of cholera have occurred at various places, but nowhere can it be said to prevail extensively as an epidemic.

In the city of New York between the 1st of May and the 25th of July the number of deaths from cholera is stated as 56. During the week ending July 21st, there were 11 deaths reported from cholera, and during that ending July 28th, 48.

In Brooklyn the number of deaths from cholera during the week ending July 28 was 42.

On Ward's, Hart's, Governor's, and Blackwell's Islands in the New York Bay, the disease is said to be prevailing very extensively.

In Jersey City, Elizabethtown, and some other towns in New Jersey, cases have occurred.

In Philadelphia during the past three weeks 32 deaths from cholera have been reported, of which number 19 are reported for last week.

A severe outbreak has occurred among some soldiers who had just arrived from Hart's Island, New York, and landed at Tybee Island, near Savannah, Georgia. At last accounts (July 28th), the number of deaths is said to be 146.

Five cases had also occurred at Galveston, among troops just arrived there from Hart's Island, New York.

CLINICS.

Transfixion of the Base of the Tongue by a Needle; Diagnosis and Removal with the Aid of the Laryngoscope.—The following case, admitted into Westminster Hospital under Dr. Gibb, strikingly illustrates the valuable aid afforded by the laryngoscope in discovering foreign bodies lodged in the throat:—

"Mrs. Annie D., aged seventy-six years, was admitted as an out-patient on May 19th, under Mr. Power, with the impression that she had a pin in her throat. He transferred her to Dr. Gibb for examination by the laryngoscope. She stated that she resided at Dulwich with her daughter, and that two weeks ago she swallowed a pin with some pudding. She felt it prick the throat right across, followed by severe pain, particularly on the left side, and dysphagia. Every now and then she had a choking sensation, with a disposition to retch. On the 13th (Sunday) she became nearly frantic with suffering, and the next day she retched continuously for nearly an hour. She had lived upon slops since the accident, and could only get them down by sipping small quantities. Her sufferings had been so severe that she had become exceedingly weak and feeble, and she was nearly suffocated on her way to town.

"Nothing could be detected externally. The neck was thin, and all the structures were easily distinguished. There was some tenderness across the hyoid bone, especially on the left side, where indeed there was a little tumefaction. In that situation the neck had been much swollen shortly after the foreign body was lodged, but this had subsided to a great extent. The voice was quite natural.

"In the fauces nothing was seen with the unaided eye, but on the tongue being held out and the laryngeal mirror introduced the black point of a needle was seen emerging from the base of the tongue on its left side, near the lateral edge of the epiglottis, and occasionally coming in contact with it to the extent of about two lines. The needle had evidently penetrated the left side of the sac of the pharynx, transfixed the tongue's base in that situation, been driven through its structure, and emerged in the situation described.

"Any attempt at removal, without some guiding point, would have been futile. Dr. Gibb, therefore, made the patient protrude her tongue out of her mouth with firmness and resolution. He then introduced the mirror with his left hand, and with the right inserted a pair of curved forceps capable of holding the minutest body with unusual tenacity, and succeeded in getting hold of the point of the needle, which he pulled outwards towards the right side, and brought out of the mouth. On examination, it was found perfect, quite black, and an inch and a half long. All symptoms of discomfort immediately subsided, and the patient left for her home, expressing herself in terms of gratitude and thankfulness for relief, after what she described as such 'horrid suffering and misery.'

"In some clinical remarks which Dr. Gibb offered upon this case, he observed that it might be taken as an invariable rule that pins were seldom discoloured, whereas needles were always black—an important point in the diagnosis when a portion only of the foreign body was seen with the laryngoscope. The patient's voice and breathing were natural; and although there were occasional attacks of dyspnœa and retching, yet beforehand it could be seen that the larynx was not in any way involved. The dyspnœa, and perhaps the retching, were due to the occasional contact with the edge of the epiglottis. He had recorded several cases in his own experience of the

removal of pins and other substances, both from the larynx and fauces. In one case a pin had become lodged within the larynx of a gentleman, the head of which was situated in the hollow of the anterior angle of the thyroid cartilage, whilst its point transfixed the right arytenoid cartilage. Symptoms of the most violent strangulation were present, and suffocation was imminent, until removal was accomplished, when they vanished, as it were, by magic. He doubted whether the patient in that instance would have been saved by even opening the trachea, unless the pin had been removed at the same time. In the generality of cases perfection of voice and breathing pointed to freedom of the larynx; but when the body could not be felt by the finger, and then removed, the employment of the laryngoscope afforded great assistance in diagnosis."—*Lancet*, June 30, 1866.

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Necrosis of the Lower Jaw from Application of Tobacco Oil to a Hollow Tooth; Removal of Dead Bone.—Smoking has long been a popular remedy for toothache, and we believe the sailor's quid enjoys a still greater reputation as a local application under these trying circumstances. In the case to which we now refer, the unfortunate patient, through his application of the remedy in a highly concentrated form, set up inflammatory action, which destroyed a large portion of his jaw.

An Italian sailor was placed, under the influence of chloroform, upon the operating table on the 26th ultimo. Just under his left lower jaw the skin was ulcerated, and there was a sinus communicating with dead bone. Mr. Paget removed several of the teeth, and then, without making any incision, contrived, with the aid of a strong forceps, to remove several sequestra representing a portion of the base, the angle, and a large part of the ascending ramus of the left lower maxilla.

From Mr. Paget's remarks, we gathered that the man, just previous to starting from Australia three months ago, suffered very much from a carious tooth. To relieve the pain, he introduced into the hollow some of the oil of tobacco which had accumulated in the stem of his pipe. Violent inflammation of the periosteum and of the surface of bone was set up, ending in death of the osseous tissue. Mr. Paget remarked, incidentally, that there was great uncertainty as to the period at which sequestra were removable. As a general rule, the more acute the necrosis the more rapid the separation of the fragment; so that within three months of acute necrosis one might expect to find the sequestrum loose, as was the case in the present instance.

The case well illustrates a source of danger which is not generally recognized. The practice of smoking is very widely spread, and foul pipes, as well as carious teeth, are very common. Every smoker of a pipe has been disgusted now and then by sucking into his mouth a few drops of the highly pungent and nauseous product of the combustion of tobacco. In the action of smoking, the tip of the tongue ordinarily receives this deleterious fluid, and is very often blistered in consequence. Were it not for the tongue, one can readily imagine that hollow teeth would often receive this fluid; with what amount of risk the case before us well shows. It is well known that for phosphorus to excite the inflammatory action which so often affects the lucifer match workers the fumes must be applied to a raw vascular surface in immediate connection with the nutrition of bone. This almost always happens through the medium of a carious tooth. There is no reason to suppose that tobacco oil would set up inflammation except under similar circumstances. It is, however, very probable that some cases of acute necrosis of the lower jaw, of obscure origin, may have really originated from the accidental poisoning of tooth-pulp by this liquid; and the possibility of this source of disease should be borne in mind.—*Lancet*, June 23, 1866.

MEDICAL NEWS.

DOMESTIC INTELLIGENCE.

Health of Philadelphia.—In our last number we stated that the general mortality, as well as that from the prevailing diseases of the season (bowel complaints), was less than usual. Since then, as will be seen from the following table showing the mortality for the last four weeks with that of the corresponding weeks of last year, a marked change has taken place. Not only has the mortality from bowel complaints largely increased, but during the week ending July 21, the general mortality reached the unprecedented amount of 716; of which as many as 50 were from

sunstroke. This may be with probability ascribed in part to the unparalleled heat experienced during that period, and this conclusion derives support from the fact that with the diminution of heat during the past week the mortality has decreased to 472, which is not a great many more than that of the corresponding week of last year (427). The deaths from bowel complaints have likewise decreased from 238 the previous week to 167 last week.

	Mortality from						
	Cholera Infantum.	Diarrhœa.	Dysentery.	Cholera Morbus.	Total from Bowel Affections.	Total Mortality from all Diseases.	Sunstroke.
1866.							
Week ending July 7,	57	6	2	4	69	324	5
" " " 14,	101	18	11	13[1]	143	472	10
" " " 21,	168	14	25	31[2]	238	716	50
" " " 28,	101	10	17	39[3]	167	472	7
1865.							
Week ending July 8,	112	19	23	4	158	438	
" " " 15,	101	20	23	4	148	453	
" " " 22,	75	18	33	3	129	443	
" " " 29,	76	27	35	2	140	427	

Medical and Surgical History of the Rebellion.—The Surgeon-General has published extracts from letters received from some of the most eminent surgeons and physicians strongly eulogistic of Circular No. 6, and urging the importance of the publication of the valuable materials collected in relation to the Medical and Surgical History of the War. It would be almost criminal not to render these materials available for the cause of humanity and science.

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American Medical Association.—The Prize Essay Committee of the American Medical Association request that all communications to be submitted to them be sent to their Chairman before the 15th day of March next, accompanied by a sealed envelope containing the name and address of the authors. The Association offers two prizes of one hundred dollars each, for the best two essays on any subject connected with the medical sciences. F. Donaldson, *Chairman;* W. Chew Van Bibber, Josiah Simpson, Edward Warren, C. C. Cox.

Baltimore, June 25, 1866.

N. B. The medical journals throughout the country will please insert the above.

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Massachusetts Medical College.—At the commencement of Harvard University, on the 18th July, the degree of M. D. was conferred on thirty candidates.

Dr. Austin Flint's Treatise on the Principles and Practice of Medicine.—The very favourable reception which the recent Treatise on the Principles and Practice of Medicine by our countryman, Dr Flint, has everywhere met with, not only at home, but also abroad, is extremely gratifying. The *Lancet*, a journal not usually disposed to judge favourably of our cisatlantic publications, in a recent No. (June 23d), notices Dr. Flint's treatise in the most complimentary terms. The reviewer states that "in the plan of the work and the treatment of individual subjects there is a freshness and an originality which make it worthy of the study of practitioners as well as students. It is, indeed, an admirable book, and highly creditable to American medicine. For clearness and conciseness in style; for careful reasoning upon what is known; for lucid distinction between what we know and what we do not know, between what nature does in disease and what the physician can do and should; for richness in good clinical observation; for independence of statement and opinion on great points of practice, and for general sagacity and good judgment, the work is most meritorious. It is singularly rich in good qualities and free from faults. Dr. Flint does not care from what source he derives material for the formation of

[1] Of these 10 are reported simply cholera.
[2] Of these 19 are reported simply cholera.
[3] Of these 18 are reported simply cholera.

opinion, and he is always explicit in his statement of the source. He defers greatly to physiologists and chemists, but has a keen perception of the point at which they cease to help the physician; and beyond this point, and in the absence of these guides, he comes to the best opinion to which his long and close clinical observation enables him to come." * * *

"We are sorry to be unable to draw more largely from Dr. Flint's book. We are sure that a more minute acquaintance with it, which we would recommend our English readers to make, will lead them to concur with us in the very high opinion of it which we have expressed above."

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Citizens' Association of Pennsylvania.—An Association has lately been chartered under this title, the object of which is to inquire into the causes of the rapid increase of pauperism, vagrancy, crime, and intemperance, and to institute measures, if possible, that shall lead to improved legislation concerning them, and to a better state of public morals and safety. The Association has just issued an address calling attention to their objects, and urging the formation of branch associations in the various towns and counties of the Commonwealth, and in the different wards of our cities, to aid in the accomplishment of their purposes.

Another important sphere of labour is the "purchase of lands and erection of buildings for the cure of the intemperate," and to this latter end the action of the Board of Directors is especially directed at the present time.

It is proposed "to offer the means of recovery, if possible, to those who may desire to accept them, and to place those means within reach of the friends of such as may be lost to the desire for good. It is not the intention to erect a large and forbidding edifice, with even the appearance of a public charity, a reformatory or penal establishment, but a series of cottages, where the domestic idea and habits of the family may be observed and perpetuated. Homes to which persons may go without any compromise of their self-respect, subjecting themselves only to such treatment and discipline as their condition may require, and where the allurements of literature and art may be secured to them, with a hope of restoring and improving the taste for the good and the true. These homes will be erected in the country, and we will endeavour to make them as attractive in situation and external surroundings as possible."

To carry out this most philanthropic and useful project, the Association appeal to their fellow-citizens for sympathy, co-operation, and pecuniary contributions.

Three hundred thousand dollars will be required to completely carry out the plan, but so soon as fifty thousand are paid a commencement will be made, for, according to the plan proposed, a few can very soon be placed under treatment.

We most earnestly commend this project to the favourable consideration of the public. Contributions may be sent to Dr. Jos. Parrish, or to either of the directors, or to the Provident Life and Trust Company, No. 111 South Fourth Street, Philadelphia.

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Prize of the Medical Society of the State of Pennsylvania.—A distinguished member of the profession, whose name we are not authorized to divulge, has placed into the hands of the Treasurer of *The Medical Society of the State of Pennsylvania* the sum of twenty-five dollars, which will be awarded to the author of the best essay on any subject pertaining to the science of medicine or surgery. The essay must be forwarded on or before the first day of May, 1867, to either of the "Standing Committee," consisting of Drs. James King, of Pittsburg, B. R. Mowry, of Alleghany City, and Prof. Traill Green, of Easton, and must be considered, in the united judgment of said committee, worthy of a prize. Each competitor is also required to affix a motto to his paper, and to accompany it with a sealed envelope having inscribed on it the same motto, and inclosing the author's name. The seal of the essay to which the prize may be awarded shall not be broken until the next annual meeting of the Society, to be held at Pittsburg, Pa., on the second Wednesday of June, 1867, when the name of the author will be announced. The other essays, upon application, will be returned to their respective authors, with the envelopes unopened.

FOREIGN INTELLIGENCE.

Diagnosis of Pregnancy.—M. Mattei, in a recent communication to the Imperial Academy of Medicine, stated his conviction that pregnancy may be accurately diagnosed

during the first four months by combined deep-seated abdominal palpation and vaginal exploration. He asserts that in this way pregnancy may very often be pronounced upon positively at the end of the first month, almost always at the end of the second, and always during the third and fourth months, unless some exceptional circumstances, which are of exceedingly rare occurrence, are present. The principle upon which this statement is founded is that the uterus cannot be gravid without alteration in its size and without presenting special anatomical and physiological modifications. Another important fact which M. Mattei says he has demonstrated, is that the gravid uterus in four instances out of five is in a state of anteversion, and in once out of five or six times in retroversion, being rarely maintained in the straight line. Each of these positions has its special signs month by month, and which have been studied by M. Mattei by aid of palpation and vaginal *toucher*. For example, in anteversion he has found that the uterine fundus is on a level with the pubes from the end of the first month, or even before that period. When the uterus remains straight or is retroverted, the diagnosis can only be made from the third month. M. Mattei gives rules for the production and perception of the uterine *ballottement*, which is to be distinguished from the fœtal.

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Menstruation and Abortion at 72 years of Age.—Dr. Priou mentions this case in the *Bulletin de la Société de Médecine d'Angers:* The patient, seventy-two years of age, began menstruating at sixteen, married at twenty-eight, and had six children, the last of whom she bore when she was forty-eight. She suckled this child, and saw no catamenia afterwards.—*Lancet*, April 7, 1866.

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Degeneration of the Human Race from residing in Crowded Cities.—There can be little doubt that about the great centres of civilization man is carrying out his sociable tendencies to such an extent as to detract considerably from the enhancement of his personal welfare, looked at in a physiological or medical point of view. He has become so fond of his neighbour, and his neighbour so fond of him, that they are almost inseparable. Their friends are in the same way of thinking, and hence all join company and form compact fraternization. But the consequence is, that they are in too close contact, and so continuously add to their number that at length they scarcely allow themselves room to move. There is no fresh air for them; they are forced to breathe their own and their neighbours' exhalations over and over again. There are so many of them in so small a space that they cannot well get rid of their refuse matters, scarcely of their own excreta. If anything in the shape of an infectious disease attacks one, it spreads like wildfire, of course, amongst the others; and even moral delinquencies are found to be in the same way catching, for if a "black sheep" gets among the flock, it is well known that "evil communications corrupt good manners." If the consequences, then, of this social agglomeration be, on the one hand, increase of political power, of wealth, of commercial and social prosperity, and successful competition with other nations, they are, on the other, an overtaxing of the physical and mental energies at our disposal, and a premature consumption of national life-blood. To see all this we have but to scrutinize the character and results of that which has been called in recent days the "great town system." To witness it in perfection we should observe the effects of this system on the physical condition and modes of life, particularly of the industrial poor of a great city. If we do this it will certainly be found just as the honorary secretary of the Manchester Sanitary Association and physician to the Salford Hospital assures us is the case.[1] There will be observed, as he states, amongst this class a singular want of stamina manifesting itself either in the gait, bearing, voice, or frame. The muscular system is rarely fully developed or well strung. Few men are of that calibre from which we might expect either vigorous or healthy offspring, or arduous and sustained labour. Cases of deformity, along with actual distortion, are far from unfrequent, while minor physical defects, many of them denoting no trifling constitutional ailments, are deplorably common. The pulse, telling of the power of the heart, assures us the great central organ of the circulation is weak and flabby. The extremities are often cold in the younger

[1] The Danger of Deterioration of Race from the too rapid increase of Great Cities. By John Edward Morgan, M. D., &c. London: Longmans.

people; the veins prominent and tortuous in the adult, and the elders complain of vertigo. Blanched lips and colourless cheeks are common to men as to women, whilst hysteria and neuralgia are to be met with under protean and abundant forms. In fine, the blood is proved to be impoverished, and the nervous system devoid of that well-balanced tension on which the easy and harmonious working of the whole system so mainly depends. In the children of this class, again, the teeth are no sooner developed than they begin to decay; enlarged glands protrude from the neck; the skin looks dry and parched; the hair scanty, scrubby, or withered. If we extend our inquiries, we shall find too that of the number of military recruits derived from the population of our great towns, nearly four out of five fail to come up to that standard of bodily fitness which the army medical referees are instructed to insist on.—*Lancet*, June 23, 1866.

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Antagonism of Race to Race.—When alluding to the influence of the antagonism of race to race in the production of the recent Jamaica rebellion, we pointed out how difficult it was for peoples of different origin to become amalgamated in social character and civilized economy. Here lies a difficulty as great as with their physical aspect and confirmation, in which they will ever remain distinct so long as they do not mix much together in marriage. And when this latter circumstance happens, a mixed breed ensues, incapable of maintaining itself as a fertile established race, but ever merging into one of its original stocks; the rapidity of the return, and the selection of the parent, being dependent on well-known circumstances unnecessary now to mention. Too often this divergency of race from race tends to such periodical outbursts of one against the other as we have of late years witnessed in India, the Gulf of Mexico, South America, New Zealand, and the Cape. It matters little who begins the business, the defendant becomes as eagerly pugnacious and exterminative as the plaintiff when once the gauntlet is thrown down.—*Lancet*, March 24, 1866.

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Suicides in Vienna.—During the month of April there were sixty-five attempts at suicide at Vienna, thirty-six of which ended fatally. Forty-seven of them were committed by men, fifteen by women, and three by children from nine to fourteen years of age. Twenty-two persons hanged themselves, eleven took poison, five cut their throats, two shot themselves, and seven died of self-inflicted stabs.—*Lancet*, June 9, 1866.

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Cattle Plague.—Dr. J. Burdon Sanderson has discovered that the blood of the animal affected with cattle plague contains the poison of the malady, so that serum obtained from it will give the disease by inoculation. "This fact," say the Commissioners, "is the most important pathological discovery yet made in cattle plague. It is pregnant with consequences in medical doctrine; for though the existence of a similar fact has been long suspected in several human diseases, it has never been proved in any."—*Lancet*, June 30, 1866.

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International Medical Congress.—The preliminary steps have been taken for the assembling in Paris, at the time of the Universal Exhibition, in 1867, of an International Medical Congress. With this view a central committee has been formed at Paris, who have elected the following officers: *President*, M. Bouillaud; *Vice-Presidents*, MM. Denonvilliers, Gavaret, and Tardieu; *Secretary*, M. Jacoud; *Treasurer*, M. E. Vidal.

This scheme has been sanctioned by the French government, and the Paris committee are preparing the rules and programme of the Congress, which they promise to communicate so soon as determined on. In the mean time we cheerfully comply with the request made to us, to make known the project, and ask the co-operation of the profession in this country.

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Discovery of a Mammoth.—At a late sitting of the Academy of Sciences a letter was received from M. de Baer, of St. Petersburg, announcing that a mammoth, still covered with its skin and hair, had been discovered in the frozen soil of Arctic Siberia. This discovery had been made in 1864 by a Samoyede in the environs of Taz Bay, the eastern branch of the Gulf of Obi. The news only reached St. Petersburg towards the end of 1865; but as the bodies of large animals will keep a long while in those regions, if they are not completely uncovered, and as this mammoth

was still inclosed in the frozen soil, the Academy of St. Petersburg has, with the aid of the Russian Government, sent M. Schmidt, a distinguished palæontologist, to examine the animal and its position in the locality. It is hoped M. Schmidt will arrive before the decomposition is too far advanced, and that a correct notion may be obtained of the outer appearance of the animal, and also, from the contents of the stomach, of its natural food. The pre-historical figure of the mammoth drawn on a piece of ivory, found in a cavern of Périgord by M. Lartet, will then admit of verification.—*Med. Times and Gaz.*, April 28, 1866.

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Unequal Justice.—The following remarks were lately made by the Judge sitting at the Old Bailey to a prisoner convicted of receiving money on false pretences, the pretence being that he was an attorney. The sum received was altogether only £47, and the prisoner obtained it by pretending that he would conduct some Chancery business for the prosecutor. The Judge's speech shows the severe manner in which our law punishes a man for pretending to be an attorney, while it does not punish him at all for pretending to be a physician or a surgeon. The law evidently supposes that it is a criminal act for a man to presume to conduct a lawsuit without possessing a legal qualification, but that it is quite immaterial for an unqualified man to pretend to cure diseases and to defraud the public of their money under this pretence. The quack attorney, it will be seen, is utterly ruined, his wife and children are reduced to beggary, and he is (as a lenient sentence) imprisoned and kept to hard labour for four calendar months; the quack doctor, under precisely similar circumstances, would have been triumphantly acquitted, under the direction of the judge, and on his retirement from the dock would have been, in all probability, received with shouts of acclamation by the multitude.—*The Medical Press and Circular*, Feb. 7, 1866.

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Visit of the French Empress to the Cholera Hospitals at Amiens.—Great excitement has been created in France by the visit of the Empress Eugénie to Amiens The cholera has been raging there to such an extent that the assizes were indefinitely postponed. Eighty deaths a day have been recorded, and it is said that no medical records exist of any European city having been so devastated by cholera as Amiens has been for the last three weeks. The Empress arrived in Amiens at half-past ten in the morning, and then proceeded to the Hôtel Dieu, visiting all the cholera wards, and thence proceeding to the various charitable refuges, &c., thus passing the whole day. Whatever practical utility there may be in such a visit, there can be but one opinion as to the noble self-devotedness, sympathy, and courage that prompted it. It is said that when complimented by a French marshal on the courage displayed by her on this and a previous similar occasion, her Majesty replied, "Monsieur, c'est notre manière d'aller au feu." The Municipal Council of Amiens have voted an address of gratitude to her for her visit, and ordered that a commemorative medal in gold should be sent to her. The last sanitary report gives forty deaths by cholera on Monday.—*Lancet*, July 14, 1866.

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The Great Prize in Electricity.—The French Government has issued an invitation to the *savants* of all nations to compete for the prize of 50,000 frs. which will be decreed five years hence to the author who shall have discovered the means of rendering Volta's pile economically applicable to manufactures as a source of heat, to illumination, to chemistry, mechanics, or practical medicine. The *concours* will remain open for five years, dating from April 18, 1866.—*Med. Times and Gaz.*, April 28, 1866.

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International Ophthalmological Congress.—The meeting of this Association, which was to have convened in Vienna in August of this year, has been postponed on account of the war existing now in Europe.

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Obituary Record.—Died in London, July 8th, 1866, Joseph Toynbee, Esq., F. R. S., aged 51; well known by his extensive and valuable contributions to Aural Pathology and Surgery. He met with his death accidentally while prosecuting his experiments, by inhaling a combination of chloroform and prussic acid.

The Death of the Baroness Dupuytren, widow of the illustrious surgeon, is announced in late French journals. She had reached a very advanced age.

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CHOLERA.

Pathological Anatomy of Cholera.—In the last No. of this Journal (p. 125), we alluded to the observations first made by the late Prof. Horner, of the University of Pennsylvania, that after death from cholera, the epithelium of the mucous membrane of the alimentary canal is found exfoliated to a greater or less extent. In two valuable papers published in the *American Journal of the Medical Sciences* for May and August, 1835, Prof. Horner states that he found the following anatomical characters in the alimentary canal after death from cholera:—

"1st. A copious vesicular eruption, entirely distinct from the tumefaction of villi, muciparous follicles or glands, and which pervades the whole canal.

"2d. A lining membrane of coagulated lymph, which exists in the small intestines at least, if not in the stomach and colon also, and resembles in texture and mode of adhesion the membrane of croup.

"3d. Vascular derangements and phenomena which are confined almost exclusively, if not entirely so, to the venous system.

"4th. An exfoliation of the epidermic lining of the alimentary canal, whereby the extremities of the venous system are denuded and left patulous."

The croupy or diphtheritic exudation on the mucous membrane has been also observed by Virchow, Cruveilhier, and is fully described by Reinhardt and Leubuscher, who state that they found the congested mucous membrane of the large and small intestine "infiltrated to a greater or less extent with a solid exudation which, after Virchow, we would designate 'diphtheritic.' This exudation contained but little water, was of a grayish or yellowish-white colour, and under the microscope was amorphous. It was rendered translucent by acetic acid and caustic alkali, but resisted the action of the former for some time. The deposit began in the superficial

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layers of the mucous membrane, and was mostly confined to the membrane itself, but in certain parts it extended somewhat beyond, as in the small intestine where it filled up the spaces between the villi, fusing them together into a continuous mass, in which, by the aid of the microscope, the outline and tissue of some of the villi could occasionally be distinguished." * * * The extent of the effusion varies extremely. "Those parts where the hyperæmia has been most marked in the cold stage were principally affected. In the small intestine the ileum was the principal seat of the diphtheritic inflammation, particularly the vicinity of the ileo-cœcal valve, from which point it extended, lessening in intensity, to a variable distance upwards into the ileum or even into the jejunum." * * * "The exudation, without undergoing any degree of organization, gradually softened, the tissue in which it was contained softened with it. This process of disintegration commenced on the surface, and by extension to deeper parts produced a *loss of substance* of variable extent; subsequently having the character of common ulceration. In general, however, the cases were fatal before the diphtheritic matter was fully thrown off." (See *Gull's Report*, pp. 57-58.)

This diphtheritic exudation was also found on the lining membrane of the gall bladder by Pirogoff, Reinhardt and Leubuscher; and Briquet and Mignot record similar observations upon the occasional occurrence of inflammation of the gall bladder and ducts, with diphtheritic exudation upon the surface of the mucous membrane.

Some of the anatomical characters described by Prof. Horner have not been noticed by other observers, and with a view to further elucidate the subject, the College of Physicians of Philadelphia appointed a committee during the prevalence of the disease in 1849, to investigate the subject, and their report is worthy of especial consideration.

The subject was brought to the attention of the College on the 19th of June, 1849, by Professor Jackson, who remarked that "our great object in the investigation of the pathology of cholera was to arrive at facts clearly and accurately established. At present all is doubt, speculation, and hypothesis. The disease is now amongst us; let us examine it systematically and thoroughly, without prejudice, and unbiassed by the authority of names or systems. What are the anatomical lesions in cholera? We have it asserted, first by Dr. Horner, and subsequently by Dr. Boehm, of Berlin, that they consist in certain changes which occur in the mucous membrane of the alimentary canal, which are characteristic of the disease. Here then, is something definite to start with. Let us investigate the subject for ourselves, and ascertain whether the observations upon which the deductions of the two pathologists just named, are based, are correct. The ordinary procedure of laying open the intestines, and hastily examining their internal surface with the naked eye, amounts to nothing; the parts to be examined must be macerated and injected, and then examined by the aid of the microscope. This is the course that has been pursued by Dr. Horner, who has pointed out the only true method of prosecuting the inquiry. To arrive at any definite results, this plan must be followed out by good anatomists, and experienced microscopists. In this manner, and by such investigators, must the facts in relation to this subject be collected, and the result placed before the profession in the form of a report.

"Dr. Jackson moved, therefore, the appointment of a committee to investigate the anatomical lesions of the intestinal mucous membrane in cholera, and report the result of their labours at a future meeting of the College."

Under this resolution, Drs. Jackson, Neill, Pepper, H. H. Smith, and Goddard were appointed the Committee.

At the meeting of the College held on the 4th of December following, Professor Jackson submitted a report in which it was stated that:—

"The ordinary autopsical examinations heretofore practised, have failed to yield any satisfactory information, and are nearly useless for the purposes of science.

"Extensive structural lesions may exist that cannot be seen or very imperfectly discerned by the unaided sight, and without proper preparation.

"It was determined by the Committee that the intestines, before being submitted to examination, should be finely injected, and subsequently inspected with the microscope.

"This task was undertaken for the Com-

mittee, by Dr. John Neill, Demonstrator of anatomy in the University of Pennsylvania. The admirable manner in which he has performed this duty can be judged of by the beautiful preparations now on the table, which he has presented to the College for its museum.

"The injections are made with turpentine coloured with vermilion. It was found by Dr. Neill, that when he employed size, it did not penetrate well, and numbers of capillaries were not filled; the same result occurred when Canada balsam was used. It led, at first, to the supposition that the capillaries were destroyed by the disease. The method last adopted, as the fine preparations on the table demonstrate, show the perfect integrity of the capillaries.

"A healthy intestine, taken from a subject who had died of pleurisy, was first injected as a standard of comparison. * * *

"The Committee, confining themselves strictly to the single object for which they were appointed, report the following facts as the result of their investigation. The preparations and drawings on the table will enable the Fellows to determine on the accuracy of the statement.

"1st. In the recent subject, the peritoneal coat, like all the serous membranes, was in all, remarkably dry. The lubricating serosity is deficient in the serous membranes.

"2d. The epithelial layer of the intestinal mucous membrane was, in all the specimens, either entirely removed, or was detached, adhering loosely as a pulpy layer mixed with mucus or an albuminoid substance. * * * * * *

"3d. *Peyerian glands.* Peyer's glands were developed to a greater or less extent in all the cases examined. * * *

"4th. *Solitary glands.* These were also developed, and contained, in the recent subject, a minute quantity of white substance. * * * * * * * * *

"5th. *Villi.* They are denuded of the epithelial covering, but are unchanged in other respects. * * * * *

"6th *Capillary Vessels.* These are entire and manifest no departure from their normal state. The appearance of the capillaries of a cholera intestine is identical with those of the healthy mucous membrane when the epithelium has been removed. In the natural state the epithelium, from its thickness, conceals the injected capillaries. * * *

"In no instance was a vesicular eruption observed."

The foregoing facts, derived from the examination of twenty-five subjects, illustrated by preparations most carefully made by Dr. Neill, are of the highest value, and shed important light on the pathological anatomy of cholera. They have been strangely overlooked, and we will therefore refer to the published *Transactions* of the college and also to the number of the *American Journal of the Medical Sciences* for April, 1850, in which will be found the report in full with coloured drawings of Dr. Neill's preparations.

Dr. Neill's preparations presented to the College are still preserved in their Pathological Museum at the Hall of the College.

These investigations, as well as the facts already stated, fully demonstrate that the alimentary canal is the seat of the morbid actions which constitute cholera. Whether or not the cause of cholera, whatever it may be, acts primarily on the ganglionic nervous centres and through them on the intestinal canal, or its primary action is on the latter, we leave it to others to discuss.[1] Either theories will explain all the phenomena; but as no lesions have been usually found in the ganglionic nervous centres, while those in the alimentary tube are constant and serious, it seems questionable whether it is sound philosophy to go beyond the latter or to seek for more causes than are sufficient to account for the phenomena of the disease.

The Berlin pathologists, whose attention was particularly arrested by the occurrence of amorphous granular fibrin in and upon the affected surface of the mucous membrane, regarded cholera as a "*destructive diphtheritic inflammation.*" We must agree with Dr. Gull that "such generalizations, however plausible, are of little value, and that we arrest inquiry by their adoption." The excessive exosmosis from the mucous membrane of the alimentary canal, by depriving the blood of its most important anatomical element—water—and its salts, suffices in our judgment to fully account for all the phenomena of the disease.

[1] That the cause of cholera does not act primarily on the blood, inducing a change in it which leads to exosmosis of its fluid constituents and salts, is shown by the investigations of Dr. O'Shaughnessy, which demonstrate that no changes can be discovered in the blood until *after* the exosmosis has occurred.

Dr. Gull, in his report (p. 118), speaks of the loss of the epithelium as "in itself an unimportant change." We cannot so regard it. On the contrary, we believe it to be a most disastrous condition, and disastrous exactly in proportion to its extent. Not only by the destruction of the mechanism of absorption which it involves, does it constitute the great obstacle to the restorative processes, preventing the supply to the blood of the materials it has lost, and rendering remedies inoperative; but the irritation resulting, when a large surface is denuded, may of itself prove fatal, like an extensive scald of the skin, even when very superficial.

We are happy to quote in support of our views so high an authority as Dr. Lionel Beale, the first number of whose "Microscopical Researches on Cholera" (*Med Times and Gaz*, Aug. 4, 1860) has reached us since the above article was in type.

This eminent microscopist says: "Every one who has seen cholera has been struck by the remarkable characters of the matter discharged from the intestinal tube, and those who have made post-mortems are familiar with the fact that the small intestines almost always contain a considerable quantity of pale, almost colourless gruel. rice. or cream-like matter. This has been proved to consist almost entirely of columnar epithelium, and in very many cases large flakes can be found, consisting of several uninjured epithelial sheaths of the villi. I have often found such sheaths in the stools in previous epidemics, and probably every one who has carefully observed the disease will have inclined towards the opinion that in bad cases it is probable that almost every villus, from the pylorus to the ileo-cæcal valve, has been stripped of its epithelial coating during life.

"This alteration in the apparatus concerned in the absorption of all nutrient matters from the intestinal canal, and the changes accompanying it and preceding it, are probably sufficient to account for death by collapse. Most important, therefore, is it to ascertain, if possible, the several phenomena of which this denudation of epithelium is the climax, and the order in which they occur. These important organs, the villi, are, in a very bad case, all, or nearly all, left bare, and a very essential part of what constitutes the absorbing apparatus is completely destroyed. If only a considerable portion of a villus was denuded, reparation might doubtless occur by new growth from the cells which remained, but if the villus was entirely stripped, it is more probable that it would waste, and its place be at length occupied by a new one, which would grow from its base, than that epithelium would grow anew from its bare surface. It is probable that the extent of this process of denudation determines the severity or mildness of the attack. If the great majority of the villi have suffered, it is scarcely reasonable to consider recovery more probable than it would be after a very extensive burn or scald."

—

Pathology of Cholera.—Dr. G. H. Barlow, Physician to Guy's Hospital, has very recently published (*Med. Times and Gaz.*, July 28, and Aug. 4th, 1866) some investigations which strongly sustain the views we have endeavoured to establish in our last No., in regard to the importance of water in the animal system, and the disastrous effects resulting from its rapid loss. We strongly recommend his observations to the consideration of our readers.

Dr. Barlow inquires: "1. What is the office performed by water in the animal economy? 2 What are the effects to be apprehended from its defect or rapid withdrawal? 3. How far are these *a priori* anticipations verified in other diseases than cholera? or, to put the proposition in a more comprehensible form, what symptoms do we observe when the admission of water into the circulation is interfered with, or when it is too rapidly eliminated from the system, or when the right performance of its functions is interfered with by disease in any organ! 4. How do these symptoms coincide with the prominent ones observed in the more advanced stages of cholera? And here I would observe that in the diarrhœa of cholera we have to do with the withdrawal of serosity—that is, of water with a small amount of salts—from the system; and that, therefore, I reject, as leading to error, all analogies drawn from the abstraction of blood or even serous fluids, though I may hereafter advert to the effects of such discharges as affording by contrast a remarkable confutation of the views in support of which they have been adduced. What, then, is the office of water in the animal economy? The water which is received into the stomach is, with such

soluble matters contained in it as are not decomposed in the primæ viæ, taken up by the capillary branches of the veins which converge to form the venæ portæ, carried onwards with the blood through the trunk of that vein; here a portion of it is separated in order to furnish a solvent for the solid contents of the bile. Passing onwards through the pulmonic and systemic circulation, the redundant water of the blood carries with it those inorganic soluble matters which it contained at first, and receives, or rather acts as a solvent to, those effete products of the interaction of the blood and the tissues which are to be expelled from the system, or at least from the nourishing fluid. Holding these substances in solution, it is carried on with the current of the blood to the other great excretory organs, the skin and the kidneys, whence it passes out of the system, carrying with it the substances which each of those organs is designed to eliminate, but which it cannot remove unless brought to it in solution.

Before proceeding to reply to my second query, I may remark that the entrance of water into the circulation may be opposed as it were *in limine* by obstructions high up in the alimentary canal; again, its passage may be intercepted in the portal system, as by disease of the liver, or even further on in the heart and lungs; all which obstructions may be so great as to prevent there being such a supply of redundant water in the blood as is requisite for the solution of the excretory matter, and from this cause there may arise inquination of the blood by these substances.

When the ingestion of fluid is obstructed at the commencement of the small intestine, we should apprehend, *a priori*, general diminution of the volume of the circulation, with changes in the physical character of the blood arising from the defect of water in proportion to the other ingredients; and as the effect of this, derangement of the circulation, gradual failure of the motor powers of the heart from the withdrawal of its natural stimulus, consequent congestion of the lungs, lividity, suppressed secretion, and urgent thirst. When the obstruction is further on in the course of the circulation—as in disease of the liver, whether primary or arising from obstructed circulation in the chest—we should anticipate, as regards the circulation, effects much of the same kind as in the former instance, though of a less intense character; since we cannot conceive of any obstruction taking place in the portal or pulmonic circulation, such as would intercept the current of the fluid so perfectly as occurs sometimes in obstruction in the small intestine. There would also be this difference that the obstruction would be either in or beyond the circulation through the liver; and, therefore, we should anticipate escape of fluid from the circulation tergal to the obstruction and the effects of a deficiency of fluid beyond. We should, in fact, expect no deficiency in the biliary secretion, but rather a tendency to diarrhœa or dropsy, the congestion, lividity, and diminished secretion from the kidneys being the same as in the former instance. It is needless to occupy time by speaking of obstructions further on in the system than the mitral valve, since beyond it the fluid may be considered to have fairly found its way into the circulation; and although such obstructions do occur, they are propagated backwards, and ultimately resolve themselves into obstructions at or tergal to the mitral valve. I therefore pass on to the main outlet by which the fluid makes its exit from the system, and through which it ought to carry the soluble excretory matter, the urea, the urates, etc. Now, if this organ be diseased so as to obstruct the exit of the fluid, we should expect the effects of retained fluid, such as dropsy, together with those of toxæmia—*e g.* head affection, spasm; but if it were so affected that it allowed the passage of the fluid, but not the elimination of the excretory matters, we should expect the uræmic symptoms only.

I now proceed to the third query, How far are these *a priori* anticipations verified by what we actually meet with in disease? Most of us have seen several—few can have been long engaged in practice, or have spent any time in the wards of our hospitals, without witnessing some—of those cases in which there is obstruction in the duodenum, or high in the jejunum. The appearance of the subject of this serious lesion cannot but strike any one who has an eye for what I would call the physiognomy of disease. I am somewhat anticipating, but I do not hesitate to aver that to the eye he presents the most exact resemblance to a cholera patient—not a mere approach to it. And what have we to account for this condition? All the ingesta taken into the stomach are instantly rejected—there can no fluid pass

into the small intestines or be absorbed thence by the mesenteric veins, the drain from the blood by the excretions cannot be repaired, and the fluidity of the blood is not maintained. The impaired fluidity of the blood prevents the access of that fluid to the air in the lungs, and one important moving power of the pulmonic circulation is suspended—I would rather say that *the* motor power of the capillary circulation of that system is so—and what is the consequence? The blood is arrested in the pulmonic arteries, there are pulmonic congestion and its consequences, lividity, a short cough, dyspnœa, a husky voice; but more than this, the fluidity of the blood being nearly destroyed, the interaction between the blood and the tissues in the systemic circulation languishes, organic functions, or, at all events, the eremacausis, upon which animal heat depends, is arrested, and therefore the temperature rapidly sinks; when we come to examine this patient more closely we shall find that, though able to speak, to move himself, to sit up in bed, and even to walk, he is pulseless: he is organically dead, or nearly so; he has the cold and shrunken extremities of cholera, and its cold tongue and breath. If we inquire further we shall find that the secretion of urine is not merely diminished, it is absolutely suppressed. I do not imagine that any one in this Society will accuse me of adducing a fictitious case, though perhaps some may imagine that I have grouped together the more remarkable symptoms found in several cases of this kind in order to produce a typical case. I beg to say that all the symptoms which I have here described presented themselves in a boy who was my patient in the clinical ward twenty-one years ago, and who passed no urine for five days before his death, and that I have met with several such since. In this case, I may add, there was found upon inspection occlusion of a portion of the duodenum by adhesion and a band of false membrane. The lungs and right heart were in a state of congestion; there were, in fact, besides the abdominal lesion, the anatomical conditions of a subject dying from asphyxia. When there is intestinal obstruction from disease further on or in the course of the small intestines, we generally find more or less depression of the moving power of the circulation; greater or less diminution of the secretion of urine; more or less, in fact, of the symptoms described in connection with duodenal obstructions, according as we have the disease higher or lower in the intestine, or, at all events, according to the earlier or later or more or less urgent vomiting—according, in short, as we have a greater or less obstacle to the admission of fluid into the system. When there is obstruction beyond the ileo-cæcal valve, the condition of the patient is altogether different. There may be obstinate constipation for days together without vomiting, and therefore with an abundant secretion of urine.

If now we take a glance at the course of the fluid from the intestinal canal to the right auricle, we often meet with cases of chronic disease of the liver—as, for instance, cirrhosis or fibroid degeneration—in which the portal circulation is materially interfered with. In these cases the urine is for the most part scanty; but there are generally none of the effects of retained secretions, since the general nutrition of the body is feeble and the waste of tissues slow; but what is remarkable is, that in such cases we have rarely, if ever, a tendency to diarrhœa, though we often induce it as a means of relief; but, on the other hand, the redundant fluid obstructed in the portal circulation is relieved by the escape of serum (not serosity) into the serous membrane of the abdomen and afterwards into the areolar tissue of the lower extremities, giving rise to ascites and anasarca.

Cases again sometimes present themselves, and though rare they are highly interesting and instructive, in which the ascending cava is obstructed as high sometimes as its entrance into the right auricle by the development of a new growth from its lining membrane, so that the orifice of the vena porta hepatica is nearly closed and the circulation through the liver greatly obstructed. Here then we have the greater portion of circulating fluid intercepted just before it reaches the pulmonic system, and there is an approach to the conditions of cholera as assigned to it by Dr. Johnson. What, under these circumstances, do we find to be the effects upon other parts of the system? There is, as in the instances of intestinal obstruction, a great diminution in the quantity of the urine; there is thirst, a feeble pulse, some coldness of the extremities, and other signs of a languid circulation. This obstruction, however, rarely finds a

vent, at least spontaneously, in the form of diarrhœa; but there are ascites, hematemesis, and sometimes intestinal hemorrhage.

We find, then, that in those cases in which there is obstruction to the passage of the fluid from the portal system into the general circulation, there are some of the symptoms which we have ascribed to defect of fluid in the system or a drain of fluid from it—a feeble action of the heart and arteries, thirst, and scanty urine—some, in fact, though in a less degree, of the symptoms of cholera. These are superadded to the other symptoms due to the mode in which the obstruction is produced, or, in other words, to the manner in which the deficiency of the fluid in the system is brought about.

We now pass on to obstructions in the pulmonic system, and we arrive at a condition of things almost identical with the hypothetical 'stoppage of blood from the right to the left side of the heart,' which has been assumed as the cause of the collapse of cholera; and, indeed, upon the theory which I have advanced of the necessity for a free transit of fluid through the system, there ought to be some of the symptoms of cholera—those, in fact, which are due to diminished flow onwards into the arterial system (whether that diminution arise from abstraction or impediment), though, according to the theory that affirms this stoppage as the potential cause of the phenomena of the disease, we ought to have cholera itself. What, then, do we really meet with? With lividity from the imperfect arterialization of the blood we have often coldness of the extremities, and now and then cramps. From the diminished arterial circulation we have scanty urine, very small and sometimes almost imperceptible pulse, and after a time gorged liver and ascites. We have, in fact, those symptoms of cholera which may be explained by the conditions which these cases have in common with cholera, namely, the diminished arterial circulation and scanty urine. But we have also other symptoms—a great impulse of the heart, due to the gorged right ventricle and enlarged liver and ascites—symptoms to be explained by conditions which are present in these cases but are absent in cholera; while, on the other hand, we have not the symptoms of true cholera, watery vomiting and purging.

Cases of this sort present themselves under various forms. Thus acute and extensive bronchitis may be set up and rapidly develop itself, and we have obstruction to the capillary circulation in the lungs between, as it were, the pulmonic arteries and veins. Some of these cases are rapidly fatal, and we have before death urgent dyspnœa, lividity, clammy extremities, very small and rapid pulse, scanty urine, but not diarrhœa, still less cholera. After death, besides the condition of the bronchial membrane characteristic of bronchitis, we have the right side of the heart and pulmonic arteries gorged, and a comparatively empty condition of the pulmonic veins and left heart. Similar instances may be found in cases of acute phthisis, fatal in a few days, which sometimes presents themselves.

When again, there is disease of the mitral valve, whether obstructive or regurgitant, we have a similar state of things as regards the right heart and pulmonic arteries, but there is in addition engorgement of the pulmonic veins and left auricle, the left ventricle being comparatively empty in cases of obstruction, though moderately full where there is regurgitation. Here we have dyspnœa, thirst, very cold extremities, a feeble (often intermittent and sometimes imperceptible) pulse, and scanty urine, but we have not cholera. These cases do no doubt present many symptoms in common with cholera—those in fact which are due to diminished supply of fluid to the arterial system, not as in cholera from its abstraction, but from obstruction to its access. Affections of the aortic valves do not produce in their earlier stages any serious obstruction to the pulmonic circulation or impediment to the ingress of fluid into the system; and later their effects become almost identical with those of affections of the mitral valve.

I now proceed to consider the effects produced by derangement of those organs by which the principal part of the water is finally removed from the system, and which, when healthy, eliminate with the water the soluble excrementitious matters which it holds in solution, but which, without a due supply of that fluid, would act as poisons as certainly as would carbonic acid if there were not free access to the lungs. It is a fact which pathologists hardly seem fully to appreciate that water is as much a depurating agent as is air, and one the want of which is as certainly, though not quite so

speedily, fatal. In several of the different forms of Bright's disease, then, we have not necessarily any obstruction to the passage of fluid into the system, neither is there in many cases any impediment to its exit from it. The quantity of water in the blood may be as great in proportion to the normal solid contents as in health; in the majority of instances it is greater, but, owing to disease of the excretory organs, the water passes away, leaving in the system the very substance which it was intended to eliminate (namely, the urea, urates, etc.); and what symptoms do these cases present in common with those which have just been mentioned, or in common with cholera! As regards the former the urine may or may not be scanty; there may or may not be dropsy, but there is almost always thirst, especially in those cases in which the deficiency in the normal solid contents of the urine is greatest, and in those cases there are commonly cramps. Now, if in nearly all the cases in which there is a suspension of the elimination of these soluble excretory matters from the system, whether that suspension arise from the obstruction to the admission of water (the solvent) into the system, from obstruction to its transmission and distribution to the eliminating organs, or from its rapid withdrawal by another and unusual source, as in cholera, or from its passing out of the system without performing its office of elimination, as in Bright's disease—if, I say, in all these instances we have thirst and cramps, and the only condition which they present in common is the defective elimination of these excretory matters, we cannot, I think, be far wrong in assuming that retained secretion or uræmic poisoning is the cause of the thirst in all these cases, and that it is a potential agent, though not the only one, in the production of cramps.

I have now traced the course of the liquid taken into the stomach to its elimination from the system, and have found that when its admission into the system is cut off at the very commencement, there are all or nearly all the symptoms of cholera, with the exception of the diarrhœa—the cramps, it is true, being of somewhat less intensity.

It is remarkable too that in the course of this inquiry we have had occasion to notice the effects of obstruction in the pulmonic circulation, whether arising in the lungs themselves or produced by disease of the heart, and we have observed that although we had some effects common also to cholera, they were precisely those which we had been led to expect would ensue from obstruction to the passage of fluid from the portal system to the general circulation, but that those choleraic symptoms which ought to have presented themselves upon the hypothesis of the origin of cholera from pulmonic obstruction were precisely those which were wanting. We see, then, that the pulmonic obstruction is not a *vera causa*, since it is not one of the existence of which we have any evidence antecedently to the other choleraic symptoms or independently of them. Neither is it capable of accounting for the phenomena of the disease, since when present as a primary affection or in the course of other diseases it does not give rise to these phenomena.

There remains one other disease to be noticed as affording powerful evidence of the effect of a drain of fluid from the system in producing the thirst, cramps, collapse, suppression of urine, imperceptible pulse, and, in short, all the symptoms of cholera—I mean the English or summer cholera. Now in most summers we have this disease occurring to a greater or less extent, and in greater or less degrees of intensity. In some cases it is a matter of very little moment; in others the diarrhœa goes on to an extent that is exhausting to the patient; and in some few cases we meet with the thirst, suppression of urine, cramps, lividity, and collapse, and, in short, the condition of the patient so closely resembles that of one passing into the collapse of true Asiatic cholera that it is impossible for any one by mere examination of the patient to distinguish it, the only guide being the character of the prevailing epidemic. I have more than once seen cases of this kind, of which I have said, if Asiatic cholera were now prevalent I should say that there was hardly a chance of the recovery of this patient, but as it is not, I hope, and even expect, that he will do well; and such has been the case in every instance which I have seen, with the exception of the aged and of diseased persons—the collapse not having been so profound as in the epidemic form of the disease, and the rice-water dejections not quite so copious.

It may, indeed, be urged on the one hand that these cases are not English cholera at all, but sporadic cases of true cholera, and

on the other that if they are rarely fatal, though they present nearly the same drain of fluid from the system, there must be some other cause in operation in the true cholera to produce a more generally fatal result.

Now to the first of these objections I would reply that these cases of English (or non-epidemic) cholera had been known to experienced practitioners long before the appearance of the Asiatic disease in this country, certainly as far back as the time of Sydenham. A similar disease, too, has long been known in other parts of Europe, and was described by Celsus.

In reply to the second objection, although I am by no means certain that the drain of fluid in these cases is as perfect as in the true cholera, yet it is not here meant to assert that the sickness and diarrhœa constitute the whole of cholera, but merely that the drain of fluid is the cause of its most prominent or dangerous symptoms. There are no doubt other morbific agencies in operation, of which I shall presently take occasion to speak.

Having now shown that when in the course of other diseases we have a great defect in the quantity of fluid in the circulation, whether that deficiency arises from obstruction to the entrance of the fluid or from its very rapid abstraction, we have symptoms more or less resembling those of cholera, according to the completeness of the obstruction or the amount of the abstraction, I think that we are justified in concluding that in cholera, where we have the same result and the same agency in operation, we are bound to accept that agency as the cause in this case as in the former.

I now proceed to notice some of the objections which have been made to the doctrine that the sickness and diarrhœa, or in other words the drain of fluid, is a potential agent in the production of the most characteristic symptoms of cholera. Now, first of all it has been objected that 'a copious hemorrhage, a profuse and long-continued leucorrhœa, prolonged lactation, and excessive purging, whether the effect of disease or medicine,' do not produce effects similar to those ascribed to the choleraic drain. It is difficult to suppress admiration of the ingenuity which should have colligated conditions so different as a drain of blood or albuminous fluid and a drain of serosity. I have already commented upon the incon sistency of comparing the abstraction of a portion of the whole blood, which for a time diminishes the volume of the circulation without interfering with the relative proportion of its ingredients, with the withdrawal of a large proportion of one of those ingredients; which, in addition to diminishing the volume of the circulation, absolutely destroys that relative proportion which is essential to its integrity and to its power of supporting vital action. But we may even go further than this, and compare the physiological effects of hemorrhage with those of the abstraction of serosity only. When a large quantity of blood escapes, whether from a wound or from morbid hemorrhage, the first effect, no doubt, is a tendency to syncope, with some coldness and clamminess of the extremities. If the hemorrhage is not fatal, a reaction speedily ensues; the heart's action becomes excited, the pulse sharp and very compressible, the countenance and lips pale; there is no difficulty in the maintenance of the circulation, although its volume is diminished, and the functions of different organs are liable to be impaired or suspended from a defective supply. One of the earliest symptoms after reaction is thirst, and generally the patient drinks freely. The fluid thus taken is rapidly absorbed, and the volume of the circulation is restored, or nearly so, but not its constitution, nor the proportion of its ingredients, the blood which has been abstracted being replaced by water only, and so it happens, as is well known, that the state which used to be generally known by the term anæmia, but which is now more correctly termed spanæmia, is brought about. This spanæmia, or poorness of the blood, consists in a defect of solid contents with an excess of water, and being the very opposite of that which is induced by the drain of cholera or diarrhœa, in which the solid contents are in excess owing to the abstraction of the fluid, we need not stop to inquire why the symptoms are so different in the one case and in the other; their very difference presents us with as strong evidence as contrast can afford us.

The same remarks apply to leucorrhœa and to other albuminous discharges, as well as to over-lactation, in which, as is well known, a spanæmic condition of the blood is induced. In this state of spanæmia there is not only a deficiency of red corpuscles, but also of albumen, so that comparatively

to them the water is greatly in excess, or, in other words, is the very opposite condition to that induced by cholera. There remains diarrhœa, whether from disease or medicine: this is indeed a most legitimate subject of comparison, and if I am compelled to differ on matters of fact with those who have advanced an opposite theory to my own, I beg to say that I do this without arrogating to myself greater candour or more accurate observations than those from whom I differ, knowing, as I well do, the different aspects in which the same facts present themselves to different minds.

As regards diarrhœa pure and simple, the most perfect form in which it presents itself to our notice is that of the English cholera. Now this disease in its very severest form is not a common one; still I believe that few who have enjoyed great opportunities of witnessing disease can have missed seeing one or more such cases, and in them there can be little doubt that more or less collapse, cramps, and suppression of urine are the consequences of the diarrhœa. I was within the last few days talking to an old practitioner of great experience whom I attended two years ago (in the summer of 1864) for English cholera, and he observed that in his case the effect of the purging could not be questioned, for that after a very copious watery evacuation he felt suddenly prostrate and 'drawn into a ball' with cramps. As regards sudden attacks of diarrhœa which now and then occur in disease of the heart, lungs, liver, or kidneys, it is very true that they rarely, if ever, go to the extent of producing cramps and collapse—in the first place, because they generally are induced by obstructed circulation or excess of serous fluid, and being the result of a conservative effort on the part of Nature, they rarely, if ever, go on to such an extent as to become destructive; and I think, if it were admissible to introduce an argument for final causes into a question of this kind, that the very fact of choleraic diarrhœa being often fatal is an argument against its beginning in a conservative effort. Indeed, to suppose that the diarrhœa of cholera originates in a conservative effort of Nature is to compare Nature to an unskilful physician administering an excessive or uncalled-for dose of elaterium or other hydragogue cathartic. As regards excessive diarrhœa from medicine, I cannot speak much from my own experience. We have all of us, no doubt, seen cases in which an aperient has acted beyond our expectations and beyond our wishes, and in some of these cases the extremities have become cold, the skin clammy, and the pulse feeble; but it is, and ought to be, rare for cases to occur with any great severity. It does, indeed, sometimes happen that there is a peculiar susceptibility arising from the constitution of the individual, or from some tendency to disease prevailing at the time—from what, in short, Sydenham has termed the 'epidemic temperament'—under which circumstances an aperient may act violently, producing exhaustion, very feeble pulse, coldness of the extremities, in fact, the milder symptoms of cholera.

There remains one other fact in support of the view which has been taken of the consequences of the withdrawal of fluid from the circulation, and it is the effect which is known to have resulted from injecting it into the veins after the system has been emptied by such a drain. Now, it is well known that in some instances the circulation has been restored and the patient has recovered by transfusion. In other cases the pulse has returned, and the patient has expressed himself as feeling quite restored, but vomiting or diarrhœa, more frequently the former, have again drained off the fluid, and the collapse has recurred. The late Dr. Babington mentioned to me the case of a gentleman in whom transfusion was employed in the collapse of cholera. He rallied and sat up, and seized the Doctor's hand and said: 'Dr. Babington, you have restored my life;' but in a few minutes diarrhœa came on, and he again sank. What is remarkable as showing the effect of the injection is that in some of these cases bright fluid venous blood has flowed from the vein after the operation.

The facts may now thus be summed up. Obstruction to the admission of fluid into the circulation causes collapse, with tendency to asphyxia, suppression of urine, and, as a consequence of this suppression, some of the symptoms of uræmic poisoning. Obstruction further on in the course of the circulation, as in the liver, causes scanty urine, and in extreme cases there may be some of the symptoms of uræmic poisoning. Still further on, there will be lividity and scanty urine, with, in severe cases, the pulse of impending asphyxia, the circulation relieving itself by effusion of serum into the perito-

neum, and in some rare instances partially by diarrhœa. But if the fluid pass freely through the system to the kidneys, and find a free exit from the system, it may nevertheless, if those organs are diseased, pass out, leaving behind it the excretory matter which the kidneys should eliminate, and the symptoms of uræmic poisoning are the result. If, however, there be a rapid drain of fluid from the system, as in the instances of diarrhœa which have been cited, we have not only uræmic poisoning, but collapse and other consequences of the defect of fluid in the circulation—the effects being the same, whether the defect arise from obstruction to the access of fluid, as in disease of the duodenum, or from excessive and severe diarrhœa."

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On the Physiological Formula of Cholera and of the Treatment.— [Dr. B. W. Richardson, of London, one of the most active and sagacious workers in the profession, has published (*Med. Times and Gazette*, Aug. 4, 1866), the following formula of the disease cholera, in which he places each point to be discussed in the character of a theorem. The remarkable coincidence between his views of the pathology of cholera and those we have endeavoured to establish in the previous number of this journal, are worthy of attention.]

"*Theorem I.—The symptoms of cholera are due to the separation of water from the albumen of the blood and of the tissues.*—This theorem, which the symptoms themselves suggest as true, and which has been accepted by considerable numbers of medical men, is demonstrated by the following synthesis:—

"If into a serous cavity of an inferior animal a given quantity of fluid of a specific gravity 100 degrees above that of the blood of the animal be slowly injected, there is an immediate transference of watery fluid from the blood to the injected fluid, the osmotic current being specially rapid towards the denser liquid that has been injected. The serous cavity thus fills rapidly with fluid, and if the fluid exuded be drawn off the drain will be sufficient to cause death by mere loss of water. The symptoms consequent on this proceeding are identical with those of cholera; there is coldness of surface, coldness of breath, convulsive movement, shrinking of tissue, and general collapse. After death the morbid conditions found are the same as in cholera —viz: viscidity of blood, dryness of tissue, and shrunken condition of the vascular organs.

"Modifications of detail, according to the animal, are essential for this experiment; but all animals are susceptible of the symptoms. Common sugar, chloride of ammonium, and chloride of sodium are the three crystalloids most ready for the operator. For an animal weighing 1 lb., from one to two ounces of a solution of one of these salts, having a specific gravity of 1160, is sufficient. Symptoms precisely analogous to those of the collapse of cholera may be induced in frogs by injecting a fluidrachm of a crystalloid solution into the dorsal sac of the animal, or even by immersing the animal in a solution containing saline matter of a proper specific gravity.

"*Theorem II.—The separation of water in the blood in cholera is due either to a local osmotic change in the alimentary canal, or to a general osmotic change in the blood itself.*—By excluding all other possible causes of the separation, there remain none other but the two causes named above. The evidence in favour of each of these is very evenly balanced. The early symptoms of the disorder, and the fact that there is an unmistakable disposition towards exudation from the alimentary surface rather than from any other surface, strongly support the view that the cause of the disease—in the early stages at all events—is exclusively local in its action. On the other side, we find distinctive evidence of changes in the condition of the albumen of choleraic blood. This blood is deficient in hydrating power —in the capacity, that is to say, for taking up water—and hence it may be argued that the primary change is in the blood; that the water separates, and that, so separated, being deficient in plastic quality, it finds in the enormous vascular surface of the alimentary canal its readiest point of exit from the body.

"Physiological experiment again favours this view. If into the aorta of an animal just dead ordinary water be abundantly injected, the alimentary system is invariably the part that is first distended; nor is there ever anasarca of any tissue nor serous exudation until the alimentary system is saturated. If, therefore, the watery matter of the blood during life were separated so that the homogeneousness of the blood were

destroyed, the first point through which the watery matter would exude under the influence of the *vis a tergo* would be the surface of the alimentary canal; and further, as this is an open surface, from which the exuded fluid can freely escape, the exudation would naturally continue through that surface until the *vis a tergo* were exhausted.

"The view most consonant with all the facts is that the choleraic poison finds its way primarily into the alimentary canal; that in the albuminous secretions of the canal it sets up catalytic change leading to its own further production; that it is absorbed at first from this canal, and is carried, as alimentary substances are carried, into the blood; that in the blood it continues to exert its specific action on albuminous matter, leading to separation of water and after exudation of water in the manner above described. The disease thus becomes general from a local point.

"On the view as here stated, and on no other, we have an explanation of the variety of character of the malady in regard to duration of symptoms and degree of exudation. In cases where the poison, as first introduced, is small in quantity or comparatively inactive, the infection of the albuminous secretion of the mucous surface and the absorption into the blood would be prolonged, the separation of water would be gradual, and the exudation, an early symptom, would be progressive and determinately marked. In cases, again, where the choleraic poison produces rapid change of albuminous secretion, with quick absorption into the blood, the homogeneousness of the blood would be destroyed with such rapidity as to leave no time for exudation prior to death.

"*Theorem III.—The collapse of cholera is due not only to the elimination of water from the system, but to the removal by the water of the heat of fluidity or latent heat of the tissues.*—This argument, which has an important bearing on the question of treatment of cholera, is based on a series of new researches I have recently conducted, and to which, in future papers on the heat of fluidity of the animal body, I shall invite the attention of the readers of this journal. *In limine*, I may say here that each part of the body that has the property of being transferred from the solid to the liquid, and conversely from the liquid to the solid condition, possesses a given capacity for latent heat, or heat of fluidity, and that the process by which the body is heated from the combustion going on in the lungs is mainly carried on by the agency of heat rendered latent. Thus fatty matter taken in the liquid form into the stomach, and conveyed unconsumed into the extreme parts of the circulation, in being deposited there yields up an equivalent of not less than 162° of heat. Thus water, which, as the grand menstruum of the solids, must be protected from losing its heat of fluidity, is so protected by the saline substances and the albumen that it cannot be solidified even locally at any temperature above 16° Fahrenheit. Thus, and lastly, for the present occasion, by their capacity for taking up the heat of fluidity and for yielding that heat up again, the blood corpuscles become the great carriers of that caloric of the body by which all the soft parts hold and maintain their mobility and physical activity.

"But in order that the blood corpuscles should be subjected to the influence of living combustion in the lungs, they must be brought over the pulmonic circuit in proper mechanical suspension—in other words, in a state of proper distribution; and this obtains so long as they are borne in the fibrin of the liquor sanguinis, the fibrin itself being diffused equally through the homogeneous fluid of water, saline matter, and albumen, which we call serum. The moment, therefore, there is separation of water from albumen, the moment the balance of water, albumen, fibrin, and blood corpuscles is disturbed by the separation and abstraction of water, that moment the blood corpuscles cease to be brought correctly to the lungs to fix caloric. As a result, there is a reduction in the amount of the caloric of fluidity that should be conveyed to the tissues, and then every ounce of water, beyond what is natural, that is conveyed from the organism carries away so much caloric at the expense of so much tissue. In fact, if it were not for the capacity of the water to abstract caloric from the tissues so as to maintain its own fluidity, the water of the tissues of the cholera patient would fall so rapidly that death would almost be instantaneous on the destruction of the homogeneousness of the blood.

"PHYSIOLOGICAL TREATMENT OF CHOLERA.—The inadequacy of all the forms of empirical treatment of cholera is so manifest

that there is no need for apology in offering what seems to be the most reasonable line of treatment, on a physiological basis. I only hope the simplicity of the suggestions which physiology at present offers may not be prejudicial to its teachings.

"According to our lights, on the basis stated, there are three lines of practice open in cholera:—

"1. To arrest elimination.

"2. To supply the caloric of fluidity.

"3. To restore the homogeneousness of the blood.

"If we could see a certain and simple way of restoring the homogeneousness of blood we should have in our hands an immediate antidote to cholera, and the third suggestion would become the first and only suggestion. Unfortunately, we have yet, by continued experiment, to learn this antidote, and we must, as a consequence, reserve the trial of it for the extreme stages of the disease—a last resource.

"To fulfil the first of these indications—viz: to arrest exudative discharge—there are only two sets of remedies known: opium, which acts, when it can be absorbed, on the involuntary nervous system, producing contraction of capillary vessels of the alimentary surface (in the same manner as it produces contraction of the pupil); and direct local astringents, which act on the secretions of the canal, viz: creasote, tannin, the mineral acids, and some metallic salts. It must be clear that none of these are curative remedies in the extreme sense of the term—that is to say, they are not direct remedies or antidotes for the primary derangement. But by their astringent action they prevent the water of the body from being conveyed away, and in this sense they conserve the animal caloric represented in the water, and which is absolutely lost when the water actually flows from the organism. Remedies of the class named are, consequently, of the utmost service, especially in the earlier stages of the malady. From a good experience of the disease in the two last epidemics, I infer that the combination of opium with one or other of the local astringents named is the best practice, and I should place the following combinations in the order in which they are most effective: Opium and creasote; opium and a mineral acid; especially sulphuric or nitrous acid; opium and tannin.

"To fulfil the second indication to sustain the caloric, there are two methods open. One of these is to prevent, as far as is possible, the radiation of sensible heat from the body. The cholera patient should be treated in the same manner as a man who is exposed to extreme coldness of the air. His animal fire low, and the conveyance of caloric in his system interfered with, the choleraic sufferer is the parallel of an Esquimaux exposed without shelter to polar air and deficiency of food. To expose a man reduced in temperature to any process that shall remove from him caloric, is contrary to all reason; to give him the advantage of the hot bath and to maintain his temperature by efficient clothing is the most natural, as it is the most obviously useful procedure. One has only to see a few times how the physical forces of life improve when the patient, collapsed and cold, temporarily rallies in the hot bath, to be assured of the soundness of the practice. This, however, is not again a curative process in the direct sense, but conservative only; for the body, by its external surface, cannot absorb caloric unless there be actual destruction of its surface.

"It has been suggested to attempt the introduction of heat by subjecting the patient to heated air for inhalation. In this way, in health, there is no doubt a large proportion of heat can be introduced; but in cholera, where the homogeneousness of the blood is lost, the conditions for the absorption of heat are absent, and while a low temperature of air would be mischievous, a very high temperature would, I fear, do no more than tend to cause dryness of surface from further loss of water by the pulmonic textures.

"It is still a desideratum to supply animal caloric, and this, I would point out, may be accomplished to a marked degree by attention to the fluids which are given as drinks to choleraic patients. I am bound to denounce as utter folly, and almost worse, the practice of charging such patients with cold and iced drinks. Presuming that a choleraic sufferer is just sustaining his natural caloric at 96° Fahr., he does this by the gradual consolidation of his tissues and the giving up from them of their heat of fluidity. At this stage let there be given to him a pint of fluid at 40° Fahr., and straightway from an equal weight of his body, there is extracted by equalization

28° Fahr. of caloric, which, as he is placed, will never again be applied for the production of force.

"This plan of cooling down a cooling body is, according to my estimate, adding evil upon evil. To treat the disease rationally, the reverse principle ought to be invariably carried out; that is to say, foods and drinks should be made the means for introducing heat abundantly. It seemed to me, on this reasoning, to be an important point to produce a substance which shall, as a liquid food, supply tissue material and with that heat.

"Taking advantage of the fact that crystallizable fat, when mixed with albumen, can be dissolved by the heat of water, which heat it fixes in becoming soluble, and gives up again on solidifying—I set to work to produce a food having the properties named. After numerous attempts the following proves most successful:—

"Take of pure stearine two ounces by weight; of best fresh butter, two ounces; of whites and yelks of eggs, well beaten up, eight ounces; of carbonate of soda, twenty grains; of chloride of sodium (common salt), eighty grains; of water, two ounces.

"As to mode of preparation for food. First dissolve, with heat, the stearine and the butter until they are both melted: then add the carbonate of soda and common salt to the eggs, and when these salts are dissolved in the egg stuff, mix it with the oily fluid, taking care that the latter is not of a temperature above 140° Fahr.; let the whole cool to a soft consistency, and finally on a slab or a board, rub in the water with a broad spatula. The compound may now be placed in a wide-mouthed jar; in a little time it settles into a moderately hard mass, and is ready for use.

"In administering this compound to the sick, take one ounce, or a tablespoonful; place it in a large breakfast cup, and rub it up equally with a teaspoonful of glycerine, or a teaspoonful of ordinary water, or a teaspoonful of fine sugar and water, or a teaspoonful of honey and water. Next pour upon the mass three ounces of water, *actually boiling*, and incorporate well. The solid substance will now briskly and evenly dissolve, and will be at once so cool that it can be drunken. The thermometer plunged in it will only register from 130° to 135° Fahr. In this process the heat of the boiling water has been mainly (allowance must be made for conduction and radiation) expended in rendering fluid the solid matter. We may estimate safely, that in addition to the sensible heat, 44° have been rendered latent for every ounce of fluid at least, which heat will be yielded up to the tissues if the fluid make its way into them.

"Contrasted with the supply of a pint (pound) of ordinary water at 40°, a pint of this fluid would effect a difference equal to 204° of added heat to a pound weight of the substance of the organism.

"I may add that the fluid food prepared as proposed above is very agreeable to the taste, and that it may be made the vehicle for conveying either solution of opium, creasote, or dilute sulphuric acid, in proper doses. I found after taking nine ounces of the fluid no sensation of nausea or uneasiness, but in the course of half an hour, the surface of my body became very hot, and the heat increasing remained unpleasantly high for several hours. For patients who would object to drink the fluid while heated, it might be allowed to cool ten or even twenty degrees. A glass of port wine is easily miscible with four ounces of the fluid.

"The last indication of treatment is to endeavour to restore the homogeneousness of the blood, and to bring the red corpuscles into proper circulatory action. This can only be effected by injection direct into the veins, and we know from experience that in the last stages of collapse the injection of certain fluids into the veins has been attended by remarkable results: the collapse has, for the time, ceased, and, in some instances, the appearances of recovery have been so decided that the most sanguine but delusive hopes have been raised. In a case which I attended with the late Mr. Ancell, of Norfolk-terrace, during the epidemic of 1853-4, we injected into the veins of a collapsed woman two pints of warm saline water four successive times, and each time with the effect of restoring her to consciousness and power of movement, thus evidently extending her life over a space of thirty hours.

"Facts such as these have been recorded by many other authors, and the effect of the experience has been to render the idea of 'transfusion,' as it is called, very popular with members of the profession, who, seeing its promise, have hoped for it more

than they have positively realized. The great question to be settled is: What fluid shall be injected? Blood has been injected and has failed; milk has been injected, and has usually failed; saline solutions have been injected, and have, as a general rule, failed; simple warm water has been injected, and has, in its turn, failed. In short, none of these solutions have been potent in saving life, but one and all of them have, for a time, averted death.

"The reason why certain immediate but not lasting benefits have followed these various injections is, that they have always been injected after being heated up to blood heat; the caloric thus supplied has been the underlying basis of the transient success. Any experimentalist can prove this by injecting the solutions into the systems of animals recently killed; he will find himself able to reproduce muscular contraction with the solutions named, equally well with each, if they are heated to the same degree, *i. e.*, from 106° to 115° Fahr.; he will find them all equally negative, if they are not thus raised in temperature. Hence we must consider the question of transfusion in a new light, or success from it will continue to be only temporary.

"In respect to transfusion in the collapse of cholera, there is as little difficulty in accounting for the ultimate failure of the proceeding, as for the temporary success. The success depends on the infusion of caloric, the failure on the inability of the fluids injected to sustain the calorific activity.

"*Blood* is not the proper fluid, however neatly it may be defibrinated, because, in the system of the choleraic patient, there is no deficiency of corpuscles nor of hæmatin, neither of which have escaped from the body; in addition, no sufficient quantity of human blood could be obtained for the purposes of injection; the mere injection of a pint or a quart of fluid is a bagatelle: what is wanted to inject is many quarts of fluid; what is wanted to be done is, to *feed* by the veins, not to fill them once and no more, with a limited change of material.

"*Milk* is indifferent because it does not combine readily with the blood in the tissues, and because it coagulates and speedily decomposes.

"*Saline solutions* combine with the blood remaining in the tissues, but they do not sustain, and they cause great shrinking of the corpuscles.

"*Water* simply conveys sensible caloric, it does not sustain; it dilutes the residual blood too freely, and ultimately, as it cools, it removes caloric from the structures with which it comes in contact.

"What then do we want in the way of a fluid? I have thought that the fluid should contain digested and easily hydrating albumen; fatty substance that would solidify at a low temperature a small quantity of saline matter, and a substance that will easily pick up the blood corpuscles, when they have been partially deprived of fluid, and restore them to their natural form and character. I have set myself to work upon drying blood to test for such a fluid, and at last have arrived at the following formula, which, on blood out of the body at all events, answers the purpose well. I give the proportions for a pint of fluid.

"Of white of egg take 4 ounces by weight; of common salt, 1 drachm; of carbonate of soda, 1 scruple; of clarified animal fat, 1 ounce; of pure glycerine, 2 ounces; of water, sufficient to make 1 pint. In preparing dissolve the common salt and carbonate of soda in the water, and having well whipped the albumen, add that also to the water. Place the mixture on a water bath, and raise the temperature to 135°; keep the mixture steadily stirred and digest at this temperature for one hour. This constitutes an artificial serum, the albumen of which hydrates freely. Having taken the artificial serum off the bath, place the fat and the glycerine together in a crucible, and melt the fat in the glycerine. When the process of solution of fat is complete, pour the solution into the artificial serum at or about 120°, and stir in carefully; set aside that the fluid may cool to 80° Fahr, at which point all the fat that is insoluble at 80° will float on the surface, take this off and filter through coarse paper or closely woven cloth.

"The fluid thus obtained is of pinkish colour, of alkaline reaction, of saline sweetish taste, and of specific gravity 1038. It picks up semi-fluid blood with instant readiness, and diffuses it most equally. Heated, it takes up one-third more caloric than does water in the same time, and in cooling it restores nearly one-third more.

"From my experience with mere saline injections I infer that the fluid might be injected, at a temperature of 106°, into the veins of a collapsed adult, in the proportion of two pints at one time.

"I have one word to say in reference to the

mode of injecting the veins. The greatest mischief has arisen in transfusion, from errors in the operation. The operator should ever remember that in this process he is feeding, not forcing; he should keep in mind how gradually nature feeds the veins by the thoracic duct, and he should imitate her; there is no necessity for force, none for hurry.

"Above all things, in feeding by the veins the syringe should be thrown aside; it is a dangerous, bad instrument for the purpose. To replace it I have constructed a simple instrument, which I have used with great success."

This instrument could not be well understood without a figure, and this we could not have prepared in time for this number of the Journal.

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Origin, Cause, and Prevention of Cholera. —At a late meeting of the Epidemiological Society, Dr. Richardson expressed the following views:—

"The positions he is prepared to maintain in respect to the cause of cholera and its propagation may be summed up as follows:—

"The cause of cholera lies outside the organism.

"The cause, when once in operation, can be carried from place to place.

"It can be carried in clothing or on any solid substance. As dried scale, it may possibly be wafted a few feet by the air; but the great medium for its diffusion is water in fluid or vapour.

"The poison thus set in motion increases in the bodies of infected persons, but only in the alimentary canal.

"The evidence is all to the effect that the poison escapes from the bodies of the infected only from the alimentary system.

"The evidence points directly to the fact that in all cases of infection the poison is always, and only, received by the alimentary canal.

"After the close of the Crimean campaign the council of the Epidemiological Society issued a series of questions to the officers of the Black Sea fleet in relation to the epidemic of cholera that prevailed in the fleet during the occupation.

"At the time of the outbreak of the cholera the population of the fleet numbered 12,572 men, these men all living under the same conditions, except in one particular, yielded 710 cases of cholera, and 397 deaths. Of these cases in the gross 91.26 per cent. of the men attacked were supplied with water derived from springs at Baltschick, a spot on which French troops had been quartered while suffering from cholera; the troops had washed their clothing at these springs, and the ground for a great distance around was saturated with their excreta. The remaining 9.74 per cent. of the infected were supplied with water partly from Baltschick. Three other crews of vessels suffered from severe diarrhœa, and of these two positively took in water from Baltschick, and the third probably so. In one vessel which used distilled water, water condensed from the steam of the engines, cholera broke out, a circumstance which might at first sight appear to go against the water dissemination theory; but on examination it turns out that this water was passed to the tank through a foul hose pipe, by which it was made impure. In all the other ships supplied with distilled water not a case occurred. The contrast is most striking; an experiment, devised for the direct determination of the truth, could not be more demonstrative.

"The evidence is not less conclusive when we pass to the facts which bear on the progress of the disease amongst the officers and men of infected vessels. I find that the officers in such ships were attacked in the proportion of 1 in 177, the men in the proportion of 1 in 16 29.

"Reading the narrative as it stands, I see no way in which to account for the comparative exemption of officers, except the very obvious one that the men, as a body, partook most freely of the infected water with which the ships were supplied without disinfecting it by heat. The officer took his wine, tea, or coffee, the sailor his grog. That the disease did not become distributed amongst the crews by mere personal contact with the infected is proved by the fact that in one ship several infected persons were removed, and that there was not a case of communicated disease amongst those who received them.

"Incidents not a few and of the most striking character stand out to attest the mode of propagation of cholera, and to prove that by water supply the disorder was most commonly reproduced In Constantinople one of these signal evidences

was made manifest. Mr. Blogg, who was present during the worst of the epidemic, has been good enough to furnish me with a fact that came under his own direct observation. It was this: The wearing apparel, the bedclothes, and the mattresses of the sick were washed at one of the fountains of the city in the neighbourhood of Tavatola. The waste pipe of the fountain being broken, this foul water became mixed with the drinking water of Tavatola. In one day after this event sixty persons in the small district supplied from this foul water were stricken with the malady

"In Paris, if all the facts had been published, similar truths were laid open; and one enterprising and eminent physician—Dr. Vacher—was so clear in his views on this subject that he wrote to the Administration, begging to have water from the public reservoirs that he might determine the organic impurity. The authorities, knowing necessarily what the disclosure would be—well aware, in fact, that the water of Paris was poisoned with organic matter derived from sewage—refused, in a tone of the most peremptory kind, this simple request.

"Snow did not sufficiently recognize that the vapour of water was an active means of conveying the choleraic poison. This truth, however, has been abundantly proved since his death. My friend Mr. Watkins, of Towcester, has shown, in a paper marked by singular acuteness of observation, that in the last epidemic which occurred in his district the persons most constantly and fatally attacked were the women who washed the clothes of the sick. This circumstance, which has been largely confirmed by other observers, is almost a necessary occurrence. Unless every portion of the garments washed were actually exposed to 212° Fahr. instantaneously, the organic poison would (at lower temperatures) begin to pass off with the vapour, and those exposed to the vapour could only escape, I had almost said, by accident.

"Snow, again, did not recognize the escape of the poison from the infected body directly in the form of water vapour. This is a point of the greatest importance, because it determines the dissemination of the poison to a considerable degree. Thus when the temperature of the air is low, the fluid excreta condense on the body or on the clothing, and the poison is confined and limited in its effect; but when the temperature is raised, the poison disseminates readily in the vapour of water from the fluid exhalations. This is, I believe, without any further mystery, the reason why cholera always spreads most easily when the temperature is moderately high.

"And for the same reason cholera spreads most easily in crowded rooms. In these rooms the temperature is artificially raised, and hot fluid foods, prepared often in the rooms, and always introduced into them, surcharge the air with moisture and heat. In such an atmosphere the poison of cholera in vapour of water finds an equable and easy surface for distribution, vapours acting virtually as vacua the one to the other.

"Once more, in modification of Snow's view respecting the propagation of cholera, I think that larger experience, from the time he moved amongst us, has shown that the dried choleraic matter deposited in infected clothing may be carried further and more readily than he supposed.

"Lastly, we may perhaps with some fairness believe that he urged rather too strongly the idea that the choleraic poison is often conveyed on the hands of attendants, or on utensils that have received choleraic excreta.

"It will be well remembered in this place that our distinguished colleague held to no point so tenaciously as the non-spontaneous origin of what he called the 'cholera cell.' This was a perfectly natural position for him to take, because in his time the germ or cell theory of disease was predominant, and because no suspicion even had been offered that organic poisons, or rather poisons derived from organic animal substances, could take any except the cell form. This being the prevailing thought, the question of the origin of the assumed cholera cell merged into the question of the spontaneous generation of organic cells altogether; and as the universal evidence was opposed to spontaneity, Snow, with the rest of the thoughtful of his compeers, held that the cholera cell always demanded for its reproduction a pre-existing cell.

"In this particular I believe him to have been incorrect, not from opposition to the truth, but from his wanting possession of those advances in physical medicine that have been made since he died.

"An observation made originally by

myself last year on the nature of the poisonous product of pyæmia throws a new and simple light on this question of the origin of organic animal poisons. In experimenting with the albuminous exudative matter derived from the diseased open surface of a patient suffering from pyæmia, I found that the poisonous matter presented the characters of an alkaloid. I learned that it was derived from the decomposition of albuminoid substance; I marked it as an 'animal alkaloid,' I named it 'septine,' and I showed that by its mere presence on a secreting surface it transformed albuminous secretion into matter like unto itself.

"These researches on the existence of an alkaloid occurring in the body during disease have been this year singularly confirmed physiologically by Dr. Bence Jones's discovery of an alkaloid natural to the tissues which is also derived from albumen, and which he has named quinoidine.

"With the facts before us that from albumen organic alkaloidal poisons can be formed by mere physical change of elements, the hypothesis of the necessity of cell growth for the production of organic animal poison falls to the ground. We need not now enter on the question of spontaneous generation at all; the formation of the poison, although from organic substance, has nothing to do with the origin of life; the poison is a purely chemical change of organic substance; a resolution rather than a construction; a movement from the active or vital towards the inert or dead condition of matter.

"In respect to cholera, the view that the poisonous matter is in the excreta in the form, not of an organic cell, but of an organic animal alkaloid, makes what was before difficult perfectly simple. As the exuded or excreted matter from a wounded surface can, and does—under certain conditions of oxidation which we have yet, by a few simple experiments, to learn—produce pyæmic poison, so the excreted matter from the alimentary canal is equally capable, under peculiar conditions of oxidation, of producing an alkaloidal organic poison, which, soluble in water, but admitting of deposit on desiccation, passes easily from one person to another under the agency of those physical states which we have seen as peculiar to the development and progress of the epidemic."—*Med. Times and Gaz.*, July 23, 1866.

Report of the Cholera Conference at Constantinople.—[The editors of the *Boston Med. and Surg. Journal* have been fortunate enough to obtain an early copy of this report, which makes a pamphlet of 83 pages, and in their No. for Aug. 9th they have given an abstract of it, which we transfer to our pages, cheerfully acknowledging our obligations to them. This important document exhibits the results of the mature deliberations of the conference, which was nearly two months in session.

The Commission was divided into six sections, to each of which questions were distributed for consideration; and the answers then submitted for adoption by the whole Commission.]

First Group of Questions—the Origin and Genesis of Cholera; the Endemic and Epidemic Prevalence of this Disease in India.—I. Whence did the cholera, called Asiatic, originally come? And in what countries does it exist in our day in an endemic form?

The Commission with one voice is able to answer without hesitation that the Asiatic cholera, which at different times has run over the whole world, has its origin in India, where it had its birth, and where it exists permanently as an endemic.

Adopted unanimously.

II. Out of India, does the Asiatic cholera exist in our day in any part of the world in an endemic form?

The Commission considers as demonstrated that the Asiatic cholera, wherever it appears, is never spontaneously developed and has never been observed as an endemic (care must be taken to distinguish secondary foci, more or less tenacious in their character) in any of the countries which have been enumerated (Europe, &c.), and that it has always come from abroad. As for the countries in the neighbourhood of India, while admitting it as probable that the cholera does not exist there as an endemic, the Commission does not feel itself authorized to come to any formal conclusion on the subject.

Adopted by all the members of the Commission, except MM. Polak, Sawas and Van Geuns.

III. Is there any reason to fear that the cholera may acclimate itself in our countries?

The Commission, without rejecting the

possibility of the fact, regards it as problematic.

Adopted unanimously.

IV. Is there in the Hedjaz an original focus of cholera, permanent or periodic?

The Commission is of opinion that Asiatic cholera does not appear to have had in the Hedjaz its original focus, but it appears to have always been introduced there from abroad up to the present time.

Adopted unanimously, except by M. Goodeve.

V. Are there in India certain localities which have the exclusive privilege of generating cholera, or which are more particularly favourable to its development? In other words, is cholera endemic in all parts of India, or only in certain regions which it is possible to circumscribe?

At this time the Commission can only answer that there are in India certain localities, comprised principally in the valley of the Ganges, where cholera is endemic, without being able to point out all of them, or to affirm that they have the exclusive privilege of giving birth to this disease.

Adopted unanimously.

VI. Do we know the causes by the concurrence of which cholera originates spontaneously in India, as well as the circumstances which make it take on an epidemic character?

The Commission feels obliged to limit itself to answering that we know not the special conditions under the influence of which the cholera breaks out in India and reigns there in certain localities as an endemic.

Adopted unanimously.

VII. What are the circumstances which concur in the development and the propagation of epidemics of cholera in India?

The Commission believes itself authorized in answering, that pilgrimages are in India the most powerful of all the causes which tend to develop and propagate cholera epidemics.

Adopted unanimously.

Second Group of Questions—the Transmissibility and Propagation of Cholera.—VIII. Is the transmissibility of cholera proved to-day by facts which do not admit of any other interpretation?

Do not all these facts demonstrate conclusively that cholera is propagated by man, and with a rapidity in proportion to the activity and rapidity of his own movements? The Commission does not hesitate to answer in the affirmative.

Adopted unanimously.

The Commission, with unanimity, concludes that the transmissibility of Asiatic cholera is an incontestable verity, proved by facts which do not admit of any other interpretation.

Adopted unanimously.

IX. Are there conclusive facts which force us to admit that cholera can propagate itself at a distance by certain atmospheric conditions, by winds, or by any other change or modification of the surrounding medium?

The Commission answers that no fact has proved, up to the present time, that cholera can propagate itself at a distance by the atmosphere alone, whatever may be its condition; and that besides it is a law, without exception, that never has an epidemic of cholera extended from one point to another in a shorter time than was necessary for man to carry it.

Adopted unanimously.

X. How is the importation of cholera effected, and what are the agents of its transmission?

It may be said, without more specific statement for the moment, that if all modes of conveyance from countries affected with cholera are not likely to propagate the disease, it is none the less prudent, at present, to consider all such means of conveyance as suspected. A more detailed examination will settle the question.

Adopted unanimously.

XI. Under what conditions does man import the cholera?

Man affected with cholera is himself the principal propagating agent of this disease, and a single cholera patient may cause the development of an epidemic.

Adopted unanimously; and—

XII. The Commission has been led to conclude that certain facts tend to prove that a single individual (with much greater reason many individuals) coming from a contaminated place, and suffering from diarrhœa, is able to cause the development of a cholera epidemic; or, in other words, that the diarrhœa called premonitory is able to transmit cholera.

Adopted unanimously.

XIII. What is the period of incubation?

In almost all cases the period of incubation, that is to say, the interval between

the moment when the individual may have contracted the cholera poison and the commencement of the premonitory diarrhœa, or of confirmed cholera, does not go beyond a few days; all the facts cited of a longer incubation belong to the class where the contamination may have taken place after departure from the infected place.

Adopted unanimously.

XIV. Can the cholera be imported and transmitted by living animals?

There is no known fact which proves that cholera has been imported by living animals; but it is reasonable, nevertheless to consider them, in certain cases, as belonging to the class of objects called susceptible.

Adopted unanimously, except by MM. Bykow and Lenz.

XV. Can cholera be imported and transmitted by linen, clothing, and in general by articles in common use?

Cholera can be transmitted by articles in common use coming from an infected place, and especially by those which have been used by cholera patients: and it also results from certain facts that the disease may be transported to a distance by these same articles when closely shut up from the outer air.

Adopted unanimously.

XVI. Can cholera be imported and transmitted by merchandise?

The Commission, while admitting with unanimity the absence of proof of the agency of merchandise in the transmission of cholera, admits (by a majority of 16 votes to 6) the possibility of the fact under certain conditions.

The negative votes were those of MM. Bykow, Goodeve, Lenz, Pélikan, Polak, and Van Geuns.

In consequence, until more fully informed, the Commission believes that it will be wise to consider as suspected, at least under particular and determined conditions, everything coming (*toute provenance*) from a cholera district.

Adopted unanimously, except by MM Goodeve, Pélikan and Polak, who declined voting.

XVII. Can the bodies of patients who have died of cholera import and transmit the cholera?

Although it is not proved by conclusive facts that the bodies of patients dying with cholera can transmit the disease, it is prudent to consider them as dangerous.

Adopted unanimously, except by M. Sawas, who declined voting.

On the Influence of Means of Communication.—XVIII. What influence do the various modes of communication, whether by land or sea, have upon the propagation of cholera?

The Commission answers, that maritime communications are by their nature the most dangerous; that it is they which propagate most surely cholera at a distance, and that next to them comes communication by railroad, which in a very short time may carry the disease to a great distance.

Adopted unanimously.

XIX. What is the influence of deserts upon the propagation of cholera?

The Commission, resting upon facts established by experience, concludes that great deserts are a most effectual barrier to the propagation of cholera, and it believes that it is without example for this disease to be imported into Egypt or Syria, across the desert, by caravans from Mecca.

Adopted by all the members of the Commission except MM. Monlau, Pélikan, Polak and Van Geuns, who declined voting.

The Influence of Crowding.—XX. What is the influence of crowds upon the intensity of epidemics of cholera, as well as upon the propagation of the disease? and under what conditions does it exercise its influence?

All crowding together of human beings, among whom cholera has been introduced, is a favourable condition for the rapid spread of the disease—and, if this crowding exists under bad hygienic conditions, for the violence of the epidemic among them.

In this case the rapidity of the extension of the disease is in proportion to the degree of crowding, while the violence of the epidemic is, other things being equal, so much the greater according as individuals have been little exposed to the choleraic influence or not at all; that is to say, in other words, individuals who have already been exposed to the influence of a cholera atmosphere enjoy a sort of relative and temporary immunity which counterbalances the bad effects of crowding.

Finally, in the case of a dense crowd,

the more rapid its separation, so much the more rapid is the cessation of the epidemic, at least if new arrivals of unaffected persons do not furnish new aliments for the disease.

Adopted unanimously.

XXI. What is the intensity and what the tenacity of cholera epidemics on shipboard?

The Commission replies that the intensity of cholera on board ships crowded with men is, in general, proportionate to the crowding, and is so much the more violent, other things being equal, if the passengers have not resided in the focus of cholera from which they started; that on crowded ships the spread of cholera epidemics is ordinarily rapid; finally, the Commission adds that the danger of importation by ships, and that of giving rise to a grave epidemic, are not entirely subordinate to the intensity, nor even to the existence of choleraic symptoms appearing during the voyage.

Adopted unanimously, except by M. Monlau, who declined voting.

XXII. What influence does the accumulation in lazarettos of individuals coming from a cholera district exercise upon the development of cholera among the people at quarantine and in the neighbourhood?

The Commission concludes that the crowding together of people coming from a place where cholera reigns in a lazaretto, has not the effect of producing, among the people at quarantine, a great extension of the disease; but that such a gathering is nevertheless very dangerous for the neighbourhood, as it is calculated to favour the propagation of cholera.

Adopted unanimously, except by M. Monlau.

XXIII. What influence do great collections of men, in armies, fairs, pilgrimages, exercise upon the development and propagation of epidemics of cholera?

The Commission concludes that great gatherings of men (armies, fairs, pilgrimages) are one of the most certain means for the propagation of cholera; that they constitute the great epidemic foci which, whether they march after the manner of an army, or whether they are scattered, as at fairs and in pilgrimages, import the disease into the country which they traverse; that these gatherings, after having been exposed, usually in a rapid manner, to the influence of cholera, become much less susceptible to its power, and that it disappears very speedily, unless newly arrived persons take the disease.

Adopted unanimously.

XXIV. What is the influence of dissemination upon the intensity and development of cholera epidemics?

The Commission concludes that the breaking up of a collection of people, at an opportune time, may render less violent an epidemic of cholera and even arrest its extension; but that this scattering, on the other hand, gives rise to great danger of propagating it, if it take place in the midst of a region as yet unaffected.

Adopted unanimously.

XXV. What part belongs to the pilgrimage to Mecca in the cholera epidemics of our day?

The part of the pilgrimage to Mecca, as an agent in propagating cholera as regards the neighbouring countries of Europe (the only one with regard to which we have positive information) has been the introduction of this disease into Egypt twice, with an interval of thirty-four years, during the hot season.

Adopted unanimously, except by M. Polak, who declined voting.

The Influence of Hygienic Conditions.—XXVI What is the influence upon the violence of cholera epidemics exerted by hygienic and other conditions of locality; in other words, what are the assisting causes of cholera?

The Commission recognizes that the hygienic and other conditions which in general predispose a population to contract cholera, and consequently favour the intensity of epidemics, are: misery, with all its consequences; overcrowding, particularly of persons in feeble health; the hot season; want of fresh air; the exhalations from a porous soil impregnated with organic matters, above all with the dejections from cholera patients.

In addition, the Commission think that, as it appears demonstrated by experience that the discharges of cholera patients contain the generative principle of cholera, it is right to admit that drains, privies, and the contaminated waters of towns may become the agents for the propagation of this disease

The Commission adds, that it seems to result from certain facts that the soil of a locality, once impregnated with cholera de

tritus, is able to retain for a considerable length of time the property of disengaging the principle of the disease and of thus keeping up an epidemic, or even of re-generating it after it has become extinct.

Adopted unanimously, except by M. Pélikan.

Immunity from Cholera.—XXVII. How is immunity from cholera to be interpreted?

The immunity which certain localities enjoy, that is to say, the resistance, permanent or temporary, general or partial, opposed by these localities to the development of cholera within their limits, is a fact which does not exclude transmissibility, but which indicates that certain local conditions, not yet entirely determined, are an obstacle to the development of the disease.

The same immunity, more or less complete and more or less durable, which the majority of persons in the midst of an infected district enjoy, an immunity which attests the individual resistance to the toxic principle, is a circumstance to which we should attach the highest importance.

In point of view of epidemic development, it is the corrective of transmissibility, and viewed with regard to prophylaxia, it sets in operation proper means to arrest the ravages of the disease.

Adopted unanimously, except by MM. Monlau and Pélikan, who declined voting.

Deductions relative to the Generative Principle of Cholera.—XXVIII. From the facts above established, and which relate to the genesis, the propagation and the transmissibility of cholera, can we draw any precise conclusion with regard to the generative principle of the disease, or at least with regard to the media which serve as its vehicles, or receptacles; with regard to the conditions of its penetration into the organism, the ways by which it passes out, the duration of its morbific activity, in a word, with regard to all its attributes, a knowledge of which is important to guard against it?

In the actual state of science, we can only frame hypotheses as to the generative principle of cholera; we know only that it originates in certain countries of India, and that it dwells there permanently; that this principle is reproduced in man and accompanies him in his journeyings; that it may also be propagated at a distance, from place to place, by successive regenerations, without ever being reproduced spontaneously outside of man.

Adopted unanimously, except by M. Goodeve, who declined voting.

XXIX. What are the vehicles of the generative principle of cholera?

Under the name of vehicles, the Commission intends to speak merely of the agents by means of which the morbific principle penetrates the organism. To this question the facts reply that the air is the principal vehicle of the cholera principle. . . . . The action of the cholera miasm is so much the more sure as it operates in a confined atmosphere and near the focus of the emission. . . . It seems that it is with cholera miasm as it is with the miasm of typhus, which rapidly loses its power in the open air at a short distance from its starting point.

XXX. To what distance from a focus of disease can the principle of cholera be transported by the atmosphere?

The surrounding atmosphere is the principal vehicle of the generative agent of cholera; but the transmission of the disease by the atmosphere, in an immense majority of cases, is limited to a space very near to the focus of emission. As for the facts cited of transportation by the atmosphere to the distance of one or more miles, they are not sufficiently conclusive.

Adopted unanimously, except by M. Goodeve, who declined voting.

XXXI. Independent of the air, what other vehicles are there of the cholera principle?

Water and certain ingesta may also serve as vehicles for the introduction into the organism of the generative principle of cholera.

This granted, it follows, so to speak, necessarily, that the passages by which the toxic agent penetrates into the economy are principally the respiratory passages and very probably also the digestive canals. As for its penetration by the skin, nothing tends to prove it.

Adopted unanimously.

XXXII. What are the principal receptacles of the cholera principle?

The matter of the cholera dejections being incontestably the principal receptacle of the morbific agent, it follows that everything which is contaminated by the discharges becomes also a receptacle from

which the generative principle of cholera may be disengaged, under the influence of favourable conditions; it follows, also, that the origin of the cholera germ takes place very probably in the digestive canal, to the exclusion, perhaps, of all other parts of the system.

Adopted unanimously.

XXXIII. What is the duration of the morbific activity of the generative principle of cholera?

It results from the study of facts that, in the open air, the generative principle of cholera loses rapidly its morbific activity, and that this is the rule; but that under certain particular conditions of confinement, this activity may be preserved for an unlimited period.

Adopted unanimously.

Finally, the Commission adopts the following formula:—

Observation shows that the duration of the choleraic diarrhœa, called premonitory —which must not be confounded with all the diarrhœas which exist during the time of cholera—does not extend beyond a few days.

Facts cited as exceptional do not prove that the cases of diarrhœa prolonged beyond that period belong to cholera, and are susceptible of transmitting the disease, when the individual affected has been withdrawn from all cause of contamination.

Adopted by fourteen votes against four, viz: MM. Gomez, Millingen, Mühlig and Salvatori; M. Monlau declined voting.

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Treatment of Cholera in the London Hospital.—It is stated in the *Lancet* (July 28th) "that during the previous week cholera had spread in a most malignant form over the east end of London, and with a severity not exceeded in any previous epidemic. As regards the treatment adopted, this has been of various kinds. Calomel in oft-repeated doses of twenty grains, astringents, stimulants, and hot vapour baths have been severally tried. Iced water *ad libitum* has been given in every case. In two cases injections of salines were thrown into the circulation, with the effect of producing immediate, but, unfortunately, not lasting, benefit. Transfusion of blood has been employed also in two cases with a similar result. It is a melancholy fact to record, but at the time of our last visit no case of undoubted cholera had recovered."

In the *Med. Times and Gazette* of the same date, we find some further details of the treatment which seems to be as purely empirical as ever.

Dr. Fraser said when the first case of cholera was admitted into the London Hospital "the inquiry that was forced upon him was, What are, if any, the new views as to the means of attempting to relieve the symptoms and obviate the tendency to death in this disease, more than were known during former epidemics? He admitted that no fresh practical means had been made known, and he said he entered upon his mission with feelings of deep depression, for his experience had shown him that no one drug or external appliance can be put down as the one thing to be given or to be done. He was sustained, however, by the knowledge that cases *have been*, as it were, snatched from the grip of death by various means, and held, therefore, that we are not to sit with folded hands, but to be up and doing all that science and common sense would dictate. Dr. Fraser, thus thrown back upon old resources, referred to certain papers published in the *London Medical Gazette* in 1848, where he had stated that five-grain doses of the sesquicarbonate of ammonia every hour were useful, and that the liquor ammoniæ itself internally acted as a most useful stimulant. 'Copious enemata of the chloride of sodium seemed in many cases to rouse the patient.' At that time he abjured, and further experience has made him continue to abjure, the use of opium, except in cases of what he calls spasmodic cholera. He wrote, 'I believe that when the patient is in a state of collapse opium is decidedly injurious.' In the former epidemic calomel in scruple doses was tried to a large extent, and with benefit in many cases. Transfusion of the following injection was practised in a few cases, and in one instance recovery was attributed to it: ℞.—Sodii chloridi ʒiij, sodæ carbonatis ʒij, aquæ lb. vj; two or three pints injected at a temperature of 112° Fahr. Dry frictions, and every other possible means of reproducing external warmth, were used.

"The foregoing, on the ground of having nothing new, have been the means up to this day more or less practised by Dr. Fraser at the London Hospital since this epidemic began, but with no greater success than

formerly; if anything, scruple doses of calomel seemed to have allayed vomiting more than anything else.

"The employment of warm brandy and water in many cases of partial collapse was of great benefit. Iced water, and ice in the mouth, are most agreeable to the patients. Saline injections and the injection of sheep's blood into the veins have been tried in former epidemics at the hospital. Enemata of warm brandy and water have seemed in two cases to be useful. The experience as yet will not warrant any general conclusions.

"The following is the plan Dr. Andrew Clark pursues: If on the admission of the patient there is incomplete collapse, and the stools are in any degree feculent, castor oil, with or without a few drops of laudanum, is administered at once. Generally, however, by the time the patient has reached the hospital, the stools have become abundant and watery, the temperature of the body has fallen, the pulse is feeble, and the limbs and face are getting blue. Astringents are then begun at once, and the patient gets either the 'lead pill' or Dr. Clark's astringent mixture, in doses and at intervals modified by the circumstances of individual cases. Each lead pill contains two grains of acetate of lead, two grains of camphor, an eighth of a grain of opium, and about a twelfth of a drop of creasote. The astringent mixture consists of aromatic sulphuric acid, sulphuric and chloric ethers, tincture of camphor and opium, spirits of peppermint, and decoction of logwood. The patient is put into a warm bath for half an hour or longer, and the bath is repeated after a few hours if there be need either for increase of temperature or absorption of fluid. Warm water, with or without salines, is also injected into the bowels. The patient is allowed milk or beef-tea thickened with any farinaceous fluid, and is directed to drink small quantities of iced water at short intervals. Turpentine is applied to the abdomen. Frictions are used for cramps. The bath is not employed when there is complete collapse. In earlier cases it gives great and prolonged relief. If vomiting is incessant and exhausting, it is treated with teaspoonfuls of neat or nearly neat brandy. When diarrhœa has ceased for twelve hours or more, a dose of castor oil and laudanum is given, sometimes preceded by a little gray and Dover's powders.

"During collapse the sulphuric acid mixture is given without opium; hot bags are placed round the body, and ice or iced water given as freely as it can be borne; warm water is injected into the bowels.

"During reaction, when the tongue is furred and eroded, the patient takes a chlorate of potash drink. Lung congestions and dyspnœa are treated by very small bleedings.

"It ought to be observed that Dr. Clark's plan is merely tentative. He, however, lays great stress on the free ingestion of fluid, the use of the warm bath, warm water enemata, and astringents in the early stage of the disease.

"At the suggestion of Dr Markham, Dr. Hughlings Jackson begged Mr. Little to inject defibrinated and oxygenated blood in some cases of collapse of cholera. (See report of Dr. Fraser's remarks.) Sheep's blood was procured, the fibrin was removed by whipping; the blood was strained, and then kept to a temperature of 110° F. by placing the vessel containing it in hot water. About six ounces of this hot fluid was injected into the veins of two patients, but it relieved them only for a short time, and appeared to bring on dyspnœa. These patients, however, were extremely ill when the operation was done, and Dr. James Jackson tells us the plan can scarcely be said to have been fairly tried. It is difficult to fix on the right sort of case. It is not fair to try it on a patient who is recovering, and to inject a patient who is nearly *in articulo mortis* is scarcely likely to lead to any result.

"Dr. Herbert Davies has adopted a saline treatment. The following is the prescription for the draught: ℞.—Sodii chloridi gr. xx. sodæ bicarb. gr. xv, potassæ chloratis gr. x, aquæ ℥j. as frequently as they will take it. The patient has, besides, as much water as he can drink.

"One physician whom we met at this hospital said that if he had to treat a case of cholera he should inject quinia subcutaneously. The subcutaneous injection of atropine has also been suggested.

"The use of warm baths finds great favour. Every patient who is not in extreme collapse is placed in a hot bath, at a temperature of about 100° to 105° F. As a rule, Mr Frederick Mackenzie tells us, the patients like the bath, and frequently beg for its repetition.

"The Resident Officers tell us that they are continually receiving accounts of 'infallible' remedies from zealous medical men who visit the cholera wards."

In the No. of the *Lancet* for Aug. 11th, it is stated that Dr. Fraser is now "trying at the London Hospital, the inhalation of steam in a few cases. For about a brt- night he employed frequent doses of castor oil—a tablespoonful every two hours. The remedy was very much disliked by the patients, who in several instances, Mr. F. Mackenzie informed us, positively refused to take it. No marked good results attended this treatment; and Dr. Fraser has since returned to the administration of calomel—a drug which is at least more easily taken by the patient and given by the nurse. To an adult he gives twenty grains to begin with, and ten grains every two hours, and so on in proportion to the age of the patient. Mr. Davies tried podophyllin and camphor, of each a grain every alternate hour, and a mixture of sulphuric and hydrocyanic acid in the intervals. He now employs calomel in five-grain doses at two hours' interval. Dr. Andrew Clark is trying castor oil, saline lemonade, and lead pill in patients admitted on different days, so that a certain number of patients are undergoing each kind of treatment. He gives baths, with Condy's fluid.

"In one case, four grains of camphor dissolved in twenty drops of turpentine was injected subcutaneously, every four hours, five or six times. The case was severe, and the man died. We observed one man who had gradually passed into a state of collapse after his admission into the hospital and whilst taking frequent doses of calomel."

At Guy's Hospital, according to the *Medical Times and Gazette*, Aug. 11, "Dr. Barlow treats cases in the stage of collapse, especially when vomiting is troublesome, by effervescing mixture, with two minims of hydrocyanic acid to each dose, every two hours. Besides this the patient is allowed to drink as much iced or cold water as he likes. Hot bottles to the feet are used in every case. Mustard poultices are applied to the epigastrium when the pain is intense. Dr. Owen Rees has tried inhalation of nitrous oxide in one case. A gallon of the gas was administered mixed with atmospheric air. This quantity was given at a dose on two occasions. The gas is put into a large elastic bag, to which is fixed an inhaler. It thus resembles Clover's chloroform apparatus. The case was a very bad one, and the patient died. In another case the same dose was given once; this patient was very bad when she was brought in, and she also died. In one case a gallon of half air and half oxygen was inhaled by a patient suffering from severe diarrhœa and vomiting. No perceptible effect was produced. This patient was admitted August 4, having then been ill a week. He is still in the wards, and is doing well. In two cases Dr. Rees directed the subcutaneous injection of Quassine. Thirty minims of a solution (containing two grains and a half of quassine) are injected into each arm every four hours. One of these patients, a man, died after eleven hours' illness. He died six hours after admission, and three and a half after the injection. This patient was almost pulseless and in extreme collapse when admitted. The other case, that of a woman, was a genuine case of cholera. Her temperature was 95° F. The solution was injected six times. She is now in the hospital, and it is hoped that she is doing well; but when we were last at the hospital (Wednesday morning), although her vomit was bilious, her motions fæcal, and although she had passed urine, her temperature was only 95°."

The editor of the *Lancet* may well remark (No. for Aug. 4), "We should feel little satisfaction at the progress of medical science if the treatment of cholera in some of our metropolitan hospitals were to be accepted as a fair example. To read the accounts collected by our reporter, and published in the *Mirror* of this and last week, is to feel that many of our hospital physicians are beginning in 1866, not where we left off in 1854, but where we began in 1849. It is melancholy to note the timidity—for it can be nothing else—which causes some physicians to linger still over the old notion that the more rapid and severe a disease shows itself, the 'stronger' must be the remedy. We find that drugs are still continued to be employed of which ample experience has shown the utter futility, and which are only prevented from destroying life because, happily, they are not absorbed—because, that is, they do not enter the economy, and cannot therefore act either for good or evil. We refuse to accept the treatment to which we have alluded as a

correct representation of the thoughtful medicine of this day. Should, unhappily, cholera spread to other parts of the metropolis, we count most confidently upon finding physicians with sufficient moral courage to abstain at least from the possibility of doing harm where the means of certainly doing good are not yet disclosed, and who will recognize the great responsibility incurred in ill-regulated, haphazard inflictions of 'treatment' upon a human body hovering on the verge of the grave. We protest against the employment of measures which seem to be directed against disease as though it were a conscious enemy, to be driven, washed, frightened, or poisoned out of the body, but which are utterly inconsistent with the whole spirit of modern medicine."

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Gason's Treatment for Cholera.—Mr. JOHN GASON recommends the following treatment of cholera: "The abdomen should be tightly swathed with a broad flannel binder sprinkled with chloroform, and the patient confined to the supine (horizontal) posture. As soon as the rice-water evacuations have commenced, and the fæcal evacuations have ceased, a tightly-rolled up towel, in length about eight or nine inches, and in circumference about three inches, and moistened with an antiseptic, should be placed lengthways beneath the buttocks, so that the orifice of the rectum may be about midway on the roller. No evacuation of the bowels should be permitted, which will be completely obstructed by the towel. Drinks must be strictly withheld until choleraic symptoms have passed. Some drops of chloroform should be given frequently on sugar during the stage of collapse. Opiates and stimulants are positively injurious, as they increase secondary fever."—*Lancet*, July 28, 1866.

[This reminds us of a suggestion gravely made by a late practitioner of this city, in 1832, that the anus should be securely closed with a soft cork so as to effectually restrain the alvine discharges, a proposal, we believe, actually carried out by some one abroad, whose name we have forgotten.]

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Roseola Cholerica.—It is stated (*Lancet*, July 28, 1866) that a rash has been observed to accompany the secondary fever of a certain number of cases of cholera. It has been mentioned by several English and continental authors, and is well described by Dr. Wilks in the Guy's Hospital Reports, third series, vol. iii. (1857). The roseola cholerica, as it is termed, exists in three varieties: 1, an eruption resembling roseola; 2, as smaller, more defined, and less vivid spots; 3, resembling scarlatina. The rash usually appears between the sixth and tenth days of the disease, but it is sometimes delayed much longer.

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Progress of Cholera Abroad. IN THE EAST.—There is now little doubt that cholera reappeared in May among the pilgrims assembled at Mecca towards the close of the religious ceremonies, and that it was very fatal in the caravan which proceeded to Medina. The disease cropped out in Jedda on the 23d of May among the Indians and lowest class of Africans—persons suffering the extremest privations. Eight deaths were officially reported between the 24th of May and the 3d of June, but more are believed to have occurred. Among the pilgrims assembled at Yambo the disease would appear to have broken out earlier, as 99 deaths were reported on the 26th of May. At this port a large body of the returning devotees were compelled to perform a species of quarantine—that is, they were not suffered to leave the place until they were considered to be purified from the epidemic. The resources of the town failed. Water and food became extremely scarce, and famine threatened to become more deadly than pestilence. Some 9000 of the pilgrims, either by force or with the connivance of the authorities, or from the insufficiency of the guard, contrived to reach the vessels in the harbor and sailed for Suez. The news of this breach of quarantine having reached Egypt, stringent measures were taken to compel the fugitives to land at some distance from Suez, and there complete the period supposed to be requisite for their purification. To the present time cholera has not reappeared (except in an occasional so-called sporadic case) in Lower Egypt; but the disease broke out in May at Massowa, on the Abyssinian west coast of the Red Sea.

Tiberias (pop. 3000), an excessively filthy town of Syria, was visited by cholera in November and December last year. On the 4th of May the disease appeared there again, and from that date to June 5th there were 54 deaths.—*Lancet*, July 28, 1866.

England.—The number of deaths in *London* during the week ending July 28th, was from cholera 904, from diarrhœa 349; the whole number of deaths 2600. In the Registrar-General's report it is stated that the average number of deaths for that (the thirtieth) week of the year is, with a correction for increase of population, 1387. "The deaths in the present return exceed by 1213 the estimated number. The excess of deaths is caused entirely by cholera and diarrhœa. 904 deaths by cholera, 349 by diarrhœa, were registered in the week, making in the aggregate 1253 deaths. The deaths by cholera in the last five weeks have been 6, 14, 32, 346, and 904; by its allied disease diarrhœa 67, 102, 150, 221, and 349.

The Registrar-General's Report shows the deaths in London for the week ending Aug. 4th, to be cholera 1053, and 354 diarrhœa.

The *Lancet* in its editorial (Aug. 4) very justly remarks: "In the devastation which the cholera is working in the eastern districts of the metropolis, we are paying the dreadful price of local self government by ignorant, careless, and unfit persons The total neglect of sanitary provisions in the Poplar, Stepney, and Bethnal-green districts has been repeatedly and for years urged upon the attention of the local authorities. The miserable defects of water-supply and drainage, the loathsomeness of the closet arrangements, the accumulation of every kind of nuisance in a great number of our parishes have been suffered in spite of constant protests from medical officers and the public press, verdicts of juries, and recommendations of coroners. But what can be expected when local authorities are small tradesmen ignorant and supine, when the owners of the worst property have a predominant influence on the government of our parishes, and when boards of health and sanitary committees, vestries, and guardians can only be moved when cholera, long threatened and repeatedly announced, has forced the door and occupied every part of the place."

[We have repeatedly urged upon the people of this country to take a lesson from the dreadful effects of the neglect of sanitary measures abroad. The selfishness and avarice of property holders and the apathy and ignorance of the labouring classes, encourage the production of the same condition of things here. Evils which might be now prevented at a trifling cost, will hereafter, when once established, be only removable at an enormous expense, and after the most frightful loss of life, to say nothing of the loss of industrial labour which sickness entails.]

As the *Saturday Review* recently remarked: "When the public health is satisfactory, sanitary reform is naturally [held to be] rather a dull subject, and sanitary reforms run the risk of being voted at least equal nuisances with the abuses which they wish to get removed."

At *Southampton* cholera still prevails; the number of deaths up to the end of July was 101.

Liverpool.—The official *weekly* returns of deaths from cholera in this borough are as follows:—

Week ending July 7th,	4	deaths.
" 14th,	19	"
" 21st,	45	"
" 28th,	87	"

West of England.—Four deaths from cholera have occurred at *Sherbourne.* The disease made its appearance in a filthy locality, known as Cold Harbour, inhabited by very poor people, where the drainage is bad, and where the water supply is miserable.

Ireland.—Three deaths from cholera were reported in Dublin.

Germany.—The disease is still rife in Northern Germany. In *Berlin*, it is on the decrease, the number of cases has diminished from 200 to 139 daily. The whole number from the beginning of the epidemic to July 28, was 4401 cases of which 2338 died, 523 recovered, and 1540 were under treatment.

It is reported that the Prussian troops stationed near Brünn are sorely afflicted with cholera, dysentery, and typhus.

Dresden.—A few cases have occurred in this city.

At *Hamburgh*, there were from June 30 to July 26th, 156 cases and 98 deaths.

Holland.—The following are the number of deaths from the commencement of the epidemic up to July 25 in the chief towns—Amsterdam, 439; Leyden, 866; the Hague, 691; Delft, 389; Schieden, 221; Rotterdam, 945; Dortrecht, 347; Gonda, 129; Utrecht, 1365; and up to July 26, in Haarlem, 159; Kampen, 171; Meppel, 187; Groningen, 792.

Belgium.—The epidemic is still making considerable progress, affecting not only the populations of large towns, but those of small localities.

At *Brussels*, the disease has increased. The number of cases from July 4 to 18, at the two hospitals, St. Pierre and St. Jean, amounted to 224 with 107 deaths, besides between one and two hundred bodies brought to the *morgue* of the hospitals.

At *Antwerp*, from the commencement of the outbreak to the 25th of July, the number of cases was 2798, and of deaths 1564.

North of Europe.—The total number of cases in *Dantzig*, from the beginning of the outbreak to the 8th of July, was 332. In the week ending 26th of July the cases were 243, and the deaths 128.

In *Stockholm*, on the 5th of July, there were 5 deaths from the epidemic.

In *Stettin*, on the week ending July 18th, the number of cases was 399, of deaths 256. In the week ending July 26th, number of cases 300, deaths 211.

The Danube and Pruth.—Prior to the 13th of July cholera of a very malignant type was prevalent at Ismaïl, Ibraïla, and Galatz. The disease also was raging at the same time at Toultcha, Reni, Jassy, Bucharest, Grazova, and other towns, also in the villages along the course of the Pruth.

St. Petersburg.—From the commencement of the epidemic June 14th to the 14th of July, 1918 deaths were reported.

Cronstadt.—From June 14th, the onset of the epidemic, to July 12th, 244 deaths occurred.

Konigsberg.—July 31. About 1000 cases have occurred of which 600 have terminated fatally.

France.—It is impossible to ascertain the extent to which cholera prevails in *Paris*, since the authorities have absolutely prohibited all returns being published. According to the *Gazette Hebdomadaire* from the 17th to the 24th of July there were 679 deaths from the epidemic, but there is reason to believe that this is below the reality.

At *Marseilles* the deaths from cholera, from the 15th to the 22d July, both days inclusive, was 135.

Many localities in the *Département du Nord* have suffered.

The disease is prevalent among the towns and villages along the whole length of the river Lys. At Dunkerque there has been no death since the 3d of June. At Amiens the epidemic appears to be rapidly declining. On the 3d of July, 71 deaths were registered; on the 5th, 31; on the 6th, 40; and on the 12th the deaths had fallen to 14. At Paimbœuf the disease has broken out seriously. Bordeaux has come within the range of infection, and many deaths are reported. At Anvers the mortality had reached from 40 to 50 daily. The epidemic has also appeared at Rouen, Forges, arrondissement Rochefort (Charente Inférieure).

MEDICAL NEWS.

DOMESTIC INTELLIGENCE.

Progress of Cholera in the United States.—The present visitation of cholera has been with few exceptions a mild one. It has appeared at various points on the Atlantic coast and along the Mississippi and Ohio rivers, but its progress has been devious; many towns in its direct course being passed over; and its stay in most places has been shorter than usual.

New York.—The disease has greatly abated in the Islands in the bay. In the city of New York the deaths from cholera for the week ending August 4th, was 239; Aug. 11th, 250; Aug. 18th, 145; August 25th, 114. Deaths from all diseases, 714.

Brooklyn.—Deaths from cholera for the week ending Aug. 18th, 95; Aug. 25th, 65.

Philadelphia.—The disease still lingers here, though not very extensively, as will be seen from the following table showing the mortality from bowel complaints and all causes for the last four weeks:—

	Mortality in Philadelphia from						
	Cholera Infantum.	Diarrhœa.	Dysentery.	Cholera Morbus.	Cholera.	Total Bowel Affections.	Total Mortality from all diseases.
1866.							
Week ending Aug. 4.	106	19	12	26	47	210	504
" " " 11,	73	11	17	24	52	177	471
" " " 18,	77	6	24	16	56	179	435
" " " 25,	61	23	24	15	91	214	462

Cincinnati.—The disease has prevailed there to a considerable extent, as is shown by the following statement of deaths from it for several days: August 16th, 78; Aug. 17th, 64; Aug. 18th, 69; Aug. 19th, 54; Aug. 20th, 61, Aug. 21st, 53; Aug. 22d, 33; making a total for seven days of 412.

St. Louis.—This city has suffered more from the scourge than any other in this country. The deaths from it for the week ending Aug. 17th, was 648; the total mortality from all diseases 895 in a population of 175,000. The Board of Health has ceased to report, but from the reports of the interments in some of the cemeteries it is evident that its ravages have not diminished. It is estimated that 1300 deaths occurred from it during the week ending August 23d.

New Orleans.—The deaths from cholera on August 22d were 27.

Mobile.—Four deaths from cholera during week ending August 25th.

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New York Academy of Medicine on the Preventive and Remedial Treatment of Cholera.—We take pleasure in complying with the request of the President of the New York Academy of Medicine, for the publication of the following preamble and resolutions, adopted by the Academy:—

Whereas, The New York Academy of Medicine has endeavoured to promote among its own members, and throughout the medical profession, a spirit of exact and practical inquiry into the preventive and remedial treatment of epidemic cholera; therefore, be it

Resolved, That this Academy hereby expresses its confidence in the utility of general and specific hygienic measures as the best means of protection against the pestilential prevalence of cholera in any locality where it makes its appearance; and that the most thorough scavenging, cleansing, and disinfection are absolutely necessary means of averting this pestilence in the cities and populous towns of our country at the present time.

Resolved, That in the judgment of the Academy the medical profession throughout the country should, for all practical purposes, act and advise in accordance with the hypothesis (or the fact) that the cholera diarrhœa and "rice-water discharges" of cholera patients, are capable, in connection with well-known localizing conditions, of propagating the cholera poison; and that rigidly enforced precautions should be taken in every case of cholera to permanently disinfect or destroy those ejected fluids by means of active chemical agents; also that with the same object in view, the strictest cleanliness of persons and premises should be enforced upon all who have charge of the sick; also, that all privies, water-closets, and cesspools should be kept thoroughly under the control of disinfectants.

Resolved, That we regard the nature and causes of cholera infection, so far as the sick or their discharges can propagate it, as being so susceptible of control that there should be no fear or hesitancy in the personal care of the sick and all that pertains to them.

Resolved, That immediate and thorough cleansing and disinfection of all persons, clothing, and things that have been exposed to the discharges or persons of the sick with cholera constitutes the chief end and object of any rational quarantine or external sanitary police regulation against cholera.

Resolved, That for the purposes here mentioned, an external sanitary police is desirable in all great maritime and river towns, but that such sanitary regulations need not seriously embarrass commercial intercourse and the interests of trade.

Resolved, That the main source of protection against epidemic cholera at the present time is to be found in the vigilant and effective operation of sanitary measures, municipal, domestic, and personal.

Resolved, That the New York Academy of Medicine cordially invites the physicians of every city and village throughout our country to urge the immediate adoption of adequate measures of sanitary protection against the introduction and ravages of cholera, and to this end we pledge our brethren and the public the hearty and continued coöperation of this Academy.

The above resolutions were unanimously adopted by the Academy.

FOREIGN INTELLIGENCE.

Raw Flesh and Brandy in the Treatment of Phthisis.—The method of treating consumptive diseases by raw meat and alcohol appears, according to M. Fuster's statements, to have been attended with wonderful results. It has now been tried in no less than 2000 cases, and in nearly all successfully. The patients increase in weight

to the extent of two, three, four, or six kilogrammes in the course of two or three weeks. Mr. Fuster recommends the adoption of his treatment for the following maladies: Advanced anæmia, the last stages of ague, typhus and typhoid, leucocythæmia, albuminuria, and diabetes, and also in cases where there has been great loss of blood or seminal fluid.—*Lancet*, July 21, 1866.

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Insufflation of Medicated Powders in Gleet.—Dr. Mallez has contrived an instrument by which medicated powders can be conveyed to the membranous portion of the urethra, a region where lies the cause of the gleet, and which region ordinary injections cannot reach. The instrument is chiefly composed of a catheter opened at both ends, another which glides into it, and an apparatus for receiving and projecting the powders. M. Ricord presented the instrument to the Academy of Medicine of Paris, and cases are mentioned in which excellent results were obtained by insufflating subnitrate of bismuth. It is plain that, by previous micturition, the powder may remain hours in the passage; and it is thought that the vagina, uterus, or any fistulous tract may perhaps be reached in the same way.—*Lancet*, July 28, 1866.

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Cæsarean Section under Local Anæsthesia.—Dr. Newman, of Stamford, has performed Cæsarean section under Dr. Richardson's process, and so far as the operation is concerned, with entire success. The patient had cancer of the os uteri to such an extent as to render delivery *per vias naturales* impossible. The incisions through the abdominal parietes and uterus were painless, and the fœtus and placenta were very easily extracted.—*Med. Times and Gaz.*, July 28, 1866.

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Death from Fear of an Operation.—In a recent number of the *Gazette des Hôpitaux*, M. Cazenave, of Bordeaux, narrates the particulars of an interesting case of death from fear just prior to an operation for lithotomy, and which, had chloroform been administered, would probably have been attributed to its influence. A distinguished veterinary surgeon, about 60 years of age, of good constitution, and possessed of great moral force, had suffered for a considerable period from multiple stricture of the urethra and a highly irritable bladder. After the urine had become purulent and ammoniacal, the presence of four calculi was ascertained. In the hopes of being able to perform lithotrity, M. Cazenave persevered for a considerable time in an endeavour to relieve the painfully spasmodic condition of the urethra. These attempts were most courageously borne by the patient, but he was excessively disappointed when informed that lithotrity, which he was very desirous of undergoing, was out of the question, and that some form of lithotomy was the only operation that was eligible. Of this he was known to entertain a great dread, but, nevertheless, at once gave his consent to its performance, retaining to all appearance his habitual calmness. In consultation it was determined to attempt the bilateral operation, and the patient having been placed and held in position by the assistants, M. Cazenave was on the point of introducing the catheter when the patient, who had exhibited entire calmness and serenity during the preparations, was observed to become pale and faint, and in the course of ten minutes, in spite of all that was done, he died. When this nervous syncope seized him, the operator had not yet even touched him.—*Med. Times and Gazette*, July 28, 1866.

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Social and Moral Condition of the East London Population.—The editor of the *Med. Times and Gazette*, in his No. for Aug. 4th, thus speaks of the squalor of a large part of the East London population who are now suffering so severely from cholera. This squalor "we have seen with our own eyes this week in a Bethnal-green street, where a patient had died in almost every house. In one house the yard was a pool of dirty soapy water, *in which* the water-butt was standing; the butt itself uncovered, dirty, green with mould, containing a host of 'foreign bodies' at the bottom—the privy foul and stinking—the yard strewed with rubbish. Now this is a state of things common amongst the poor from East to West; but why? It is of no use to blame vestries, or medical officers of health, or landlords; granting that they may fail in their duty, why do not the people—the victims—help themselves? Surely any man might in ten minutes raise a water-butt out of a puddle of filth and put it on a few bricks; he might contrive a cover for it; he might sweep up a yard, and pour a bucket of water down a closet and brush it

out, and in the present panic he might get gratis from any vestry enough carbolic acid or chloride of lime to disinfect a street! But the poor will not stir a finger to help themselves. They may be on the look-out for district visitors with money, soup, and tracts, or they may trust to luck or to Providence, or may console themselves by saying that they can't die till their time is come—but they won't stir a finger to help themselves. This cholera is a severe test of our sanitary and hygienic arrangements; it is a still severer one of our social and moral condition."

—

Adhesion of Austria to the Neutrality of Army Surgeons.—We see that it is just announced that Austria has at last given in her adhesion to the provisions for the neutrality of Army Surgeons and the wounded adopted by the Geneva Congress, she being the only European power who had not already agreed to them. It would have been more commendable as well as more advantageous for her if she had done this before the commencement than after the termination of the present war. At the battle of Skalitz an Austrian ambulance, posted to all appearance in the best possible manner for the execution of its duties and for securing a retreat if necessary, was suddenly charged from behind by a troop of Prussian cavalry, and the Doctors trodden under foot. The chief Medical officer, Dr. Kloss, was precipitated into the River Aupa, and was seen no more, while another Surgeon was kicked by a horse, and a third killed outright. In a neighbouring ambulance a consultation of Surgeons was suddenly dispersed by a shower of projectiles, leaving behind twenty-six severely wounded soldiers, protected only by a white flag. An ambulance, formed in the woods at the battle of Sadowa, was only discovered by the Prussians two days afterwards, the wounded having been abandoned by their medical attendants, and left without any succour whatever. So, too, 130 wounded were left in a hospital at Lechtomischel, without any succour, until the arrival of the Prussians three days afterwards. It is said, also, that as many as eighteen Austrian Surgeons were either killed or captured. Two prominent members of our profession at Vienna—Professors von Pitha and Hebra—have to deplore the loss of their sons, both Army Surgeons, one killed at Skalitz, and the other wounded and made prisoner.

Lady Volunteer Nurse in the London Hospital.—In the cholera wards of the London Hospital, in a scene of suffering and death sufficient to try the stoutest heart, a lady volunteer nurse has passed her time since the beginning of the epidemic, moving from bed to bed in ceaseless efforts to comfort and relieve. So very youthful and so very fair is this devoted girl that it is difficult to control a feeling of pain at her presence under such circumstances. But she offered her help at a time when, from the sudden inroad of cases, such assistance was urgently required, and nobly has she followed her self-sought duty. Wherever the need is greatest, and the work hardest there she is to be seen toiling until her limbs almost refuse to sustain her. And the effect of the fair young creature's presence has been that the nurses have been encouraged by her never-failing energy and cheeriness, so that dread of the disease has been lost in efforts to combat it. This is an instance of devotion which it would be an insult to praise—it need only be recorded.—*Lancet*, July 28, 1866.

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British Medical Association.—This Association held its annual meeting this year on the 19th August, at Chester. Next year it is to meet at Dublin under the presidency of Dr. Stokes.

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Honours to Medical Men.—The Queen of Great Britain has elevated Sir James Clark to the dignity of Commander of the Order of the Bath; and conferred Knighthood on Dr. Thomas Watson, President of the Royal College of Physicians; both are well worthy of this acknowledgment of their merit.

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Obituary Record.—Died, in Edinburgh, May 17th, David Craigie, M. D.

—— At Worcester, July 30th, in the 73d year of his age, Sir Charles Hastings, M. D., the founder of the British Medical Association, and one of the most eminent and highly esteemed physicians in England.

—— In Paris, July 31st, of cholera, aged 69, M. Gibert, the celebrated Dermatologist of the Hôpital St. Louis. Mr. G. had for several days suffered from premonitory diarrhœa, but neglected to take any measures to arrest it, as he had always ridiculed the significance of such prodrome. He fell a victim to that error of judgment.

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CLINICS.

CLINICAL LECTURE.

Clinical Lecture on Addison's Disease. By EDWARD HEADLAM GREENHOW, M. D., F R. C. P., Assistant Physician to Middlesex Hospital, &c. &c.— *Gentlemen :* I propose to bring under your notice to-day a rare but very interesting disease, which was first recognized only a few years ago by the late Dr. Addison, of Guy's Hospital, and is on that account now commonly called Addison's disease. It consists in a particular change of structure in the suprarenal capsules, which usually manifests itself by a peculiar train of constitutional symptoms and by a very remarkable discoloration of skin. From this last-named most striking, though not quite invariable feature, the disease has been frequently but not very happily termed bronzed skin disease; for it is only in a comparatively small number of cases that the peculiar discoloration of skin could be accurately described by the term bronzing.

During the last twelve months, it has singularly happened that we have had in the wards of the hospital four well-marked cases of this uncommon disease; namely, two under Dr. Thompson's care, one under the care of Dr. Stewart, and one under my own care. My own case and one of Dr. Thompson's left the hospital much benefitted by treatment, and are still under my occasional observation as outpatients; Dr. Thompson's other case proved fatal on the 2d instant; and the case under Dr. Stewart is at present in Founder Ward. The suprarenal disease in this patient is, I scarcely doubt, associated with caries of one or more vertebræ, which is by no means an unusual complication of Addison's disease; but the case is none the less, in its history and progress, a typical example of that disease; and the discolouration of skin is perhaps the most characteristic of any which has come under my observation. Partly

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on this account, and partly also because you have still the opportunity of verifying my statements, I proceed, with Dr. Stewart's permission, to read you an abstract of the notes I have taken of the case.

C. S., aged 32, was admitted an in-patient on the 13th of February. In early life he worked as an agricultural labourer in his native county of Herefordshire, but for the last thirteen years has been employed as a coal-porter at a London wharf. About three years previously to the commencement of his illness, he had strained his back severely in the lower dorsal region while shunting a loaded coal-truck, and had felt as if something gave way at the moment of the accident. For some days he suffered much pain in the part, and more or less ever afterwards, though he was able to continue his work. He did not himself attribute the origin of his illness to this injury, and, indeed, attached so little importance to it, that I only elicited the fact by careful inquiry. He stated his health to have been uniformly good until about eight or nine months before his admission to the hospital, when his illness began with headache, sweating and debility, followed by loss of appetite, sickness and breathlessness on exertion, with pain in the lumbar region and right flank. The symptoms of asthenia steadily increased; faintness was superadded to breathlessness on making any muscular effort; and he had been incapacitated from labour for about two months before he came under our observation a month ago. The gastric disturbance also continued; he had nausea, and retching at other times, as well as vomiting after food; the pains in the loins increased in severity, and became associated with gastralgia and with pains in both hypochondria; and these symptoms were all much aggravated by any attempt to move about. Three or four months after the accession of the first constitutional symptoms, his wife had noticed a slight duskiness of colour, which she believed was at first confined to the face and hands, but which gradually spread over the whole body, and progressively deepened in hue.

On careful examination a few days after his admission, I found the skin generally of an olive-brown colour, which was especially marked on the face, hands, and neck; the shade being deepest on the more exposed parts, and least dark on that part of the forehead covered by the hair. The chest, down to the fourth rib, was paler than the face and neck; but the nipples and areolæ were very dark. From the fourth rib downwards, the colour gradually deepened; the abdomen was very dark; the groins still more so; and the penis and scrotum almost black. The upper parts of the thighs were also dark, but the colour faded away towards the legs, which were very lightly tinted. On the right flank, and also over the lumbar vertebræ, were well-defined oval patches darker than the surrounding skin, corresponding with the sites of blisters which had been applied some months previously for the relief of pain in those parts. The knuckles likewise were more deeply coloured than the rest of the hands. But for the thoroughly English cast of the man's features, the peculiar tinge of the discolouration might have easily caused him to be mistaken for a person belonging to one of the darker races of mankind. The white pearly hue of the conjunctivæ contrasted strongly with the dusky complexion; and this is a peculiarity which has been remarked by all those who have carefully observed genuine cases of this disease. Upon the face were several small black specks, which might have passed for congenital marks, had not the patient's wife assured me that they had appeared since the commencement of his illness—a statement corroborated by the fact that they have manifestly darkened and increased in size, if not in number, since he came under observation. Lastly, there was a dark stain upon the right edge of the tongue, near the tip; and the lips and buccal mucous membrane generally were mottled with brownish discolouration.

In this description, noted nearly a month ago, I have not found it necessary to make any change; for the only alteration that has occurred is the general deepening of the discolouration characteristic of the later stages of the disease.

The patient has complained more or less, ever since his admission, of pain in the loins and right side, and of occasional pain in one or other hypochondrium, but most frequently in the right. He also complains of difficulty in stretching out his legs when he has been lying for some time on his back, his feet resting on the bed and his knees raised; and says that this difficulty is caused by a sense of tightness, as though the extension of the legs were restrained by cords

situated between the flanks and the groins. He has, moreover, a feeling of weakness in the back, as if it were broken or had a loose joint; and a sense of constriction round the lower part of the abdomen, which seems to start from the weak and painful portion of the spine. He rarely now attempts to leave his bed; but when he does so, suffers from vertigo, with dimness of sight and sickness, accompanied by such extreme prostration, that he is afraid of falling; and, when he sits down in a chair, can scarcely rise again. He has an anxious, exhausted expression of countenance, which is increased by sitting up in bed; is breathless on the slightest exertion, with a tendency to yawn, especially at nights; has frequent retchings, and rarely passes a day without vomiting. His appetite is bad; bowels confined, the fæces being dark coloured and dry; urine normal. The pupils of his eyes are large, and act sluggishly under the stimulus of light. He is slightly deaf; but his intelligence is unimpaired. He sleeps badly, owing to the pain in the loins, which he says is more intense by night than by day. There is frequently uneasiness on pressure over the epigastrium and one or other hypochondrium, and always great tenderness on pressure, and severe pain on percussion, over several of the lower dorsal and upper lumbar vertebræ; but he has neither difficulty in micturition, nor yet pain, numbness, nor formication in the lower limbs. The pulse varies from 80 to 100, is exceedingly feeble even when the patient is in a recumbent posture, and becomes almost imperceptible when he is raised up in bed The percussion-resonance over the anterior and upper part of the chest is slightly deficient; and the respiration is tubular below the right clavicle, and harsh below the left. There is also increased vocal vibration on the right side. The percussion resonance is somewhat deficient over the base of the right lung posteriorly, and the respiration is somewhat harsh over the back of both lungs; but there are no moist sounds. The patient has slight cough, and is subject to catarrh. The heart's impulse, though feeble, is comparatively stronger than the arterial pulse: and the sounds are healthy.

The history and progress of this case render it, as I have said, a typical example of Addison's disease; for although it is true that, besides the vertebral complication to which I have already alluded, there exists apparently some slight inactive pulmonary affection, I need not tell you that neither of these would account for the peculiar constitutional symptoms and discolouration of skin which I have described, and which present in an unusually striking and fully developed form all the features recognized as belonging to this remarkable malady.

As regards the assumed vertebral disease, I am led to diagnose it both by the local pain and tenderness in the lumbar vertebræ, and also by the sense of constriction round the abdomen, and the difficulty in stretching out the legs. Lumbar pain, and obscure pain on percussion over the loins, are indeed common in this disease; but here the pain is more severe and better defined than in simple cases of Addison's disease, and is accompanied by the other symptoms which I have described, and which are by no means usual features. I have no doubt that the injury to the back, received now nearly four years ago, produced some mischief, which set up slowly progressive inflammation, with, as I have said, probably caries of the bone and the formation of an abcess; and, if we should hereafter have the opportunity of examining the state of these parts, I expect that we shall find the cellular tissue around the suprarenal capsules thickened, and the capsules themselves infiltrated with tubercular or scrofulous-looking deposit. The time that has elapsed since the injury is indeed considerable, but by no means unparalleled; and I may mention that, in a case of this disease under my own care some years ago, the illness appeared also to have originated from a strain in the back received seven years before the commencement of definite symptoms of Addison's disease. That there is an intimate relation between the vertebral and suprarenal disease in our present case, I am well assured; and I believe the latter to have been caused by the extension of inflammation from the cellular tissue in the vicinity of the carious bone to that surrounding the capsules, and from it, secondarily, to the capsules themselves, which have thus become the seats of inflammatory deposit. My opinion respecting the origin of the suprarenal disease in this case is confirmed by a careful perusal of all the published cases I have been able to meet with; for not only has caries of the spine been found associated with Addison's disease in more cases than any other lesion, excepting always tubercle in the lungs and

other organs, but in many other cases in which it was not found I am persuaded, by the symptoms recorded during life, that disease of vertebræ might have been discovered, had it been sought for at the *post mortem* examinations. Moreover, even when no disease of the spine exists, the capsules are often found adherent to adjoining organs, and surrounded by thickened cellular tissue, showing that inflammation has probably been the primary link in the chain of local mischief.

The pulmonary affection in this case may be of tubercular character; but, whether or not, it is assuredly much too slight to be of any moment in the illness, and far less could it account for the remarkable prostration and other symptoms under which the man is labouring. Seeing, however, that his occupation has been of a very dusty nature, that he has been subject to catarrh, and that there is certainly no marked difference of percussion note in the two infraclavicular regions, I incline to believe that the slight chest-symptoms are due rather to continued mechanical irritation arising from the inhalation of dust, than to actual tubercular disease. But on this point I can only speak with some doubt and reserve; for the physical signs are slight, and the patient's condition such as to preclude a thorough examination, and it is certain that tubercular disease of the lungs has been frequently found associated with Addison's disease in so quiescent a form as to have given rise to no prominent symptoms during life. Moreover, as I have myself explained on many occasions, the pulmonary affection caused by mechanical irritants is apt to develop slow tubercular disease in persons of strumous constitution.[1] Be this as it may, after eliminating all those symptoms which can be referred to the vertebral and pulmonary complications, there still remain, in an unusually complete degree of development, almost all those especially characteristic of Addison's disease of the suprarenal capsules; and, before proceeding further, it will perhaps be well that I should sum up these under the two heads of Constitutional Symptoms and External Signs; as I have observed them, more or less perfectly developed, in all the genuine cases of the disease which I have had the opportunity of watching.

1. *Constitutional Symptoms.*—These are gradually progressive asthenia, often originating without any apparent cause, and seldom dating from any definite period; great languor and indisposition for exertion, with, in advanced cases, breathlessness and palpitation, frequent sighing or yawning, and generally faintness on making any muscular effort, sometimes even on being raised up in bed. There is almost invariably great weakness of the heart's action and remarkable feebleness of pulse; loss of appetite; irritability of stomach with nausea; and towards the end always occasional, often persistent, vomiting. The mind is generally clear to the last; but so great is the prostration in the latest stage of the disease, that the patient often lies in a drowsy, apparently semicomatose state; from which, however, he can be roused by questions, and to these he generally gives pertinent, though slow and reluctant answers. The above I should class as the characteristic symptoms of the disease; but there are, in many cases, pains in the loins, hypochondria or epigastrium, more rarely vertigo and dimness of sight, and occasionally, near death, a tendency to delirium. Death takes place from asthenia, and sometimes rather suddenly. It is a remarkable fact that, notwithstanding the great debility which is the earliest and most constant symptom of the disease, there is, as a rule, in uncomplicated cases, comparatively little or no emaciation. The skin also is soft and cool; the tongue usually clean and moist until the last days of life; the bowels seldom disordered, though sometimes confined; and the urine generally normal. I should not omit to state that the constitutional symptoms which I have described are sometimes masked, or have at least been overlooked, in cases in which Addison's disease existed contemporaneously with some other serious wasting disease, such as phthisis or lumbar abscess; but even in such cases the languor

[1] This lecture was delivered on the 14th of March, and the patient here referred to died on the 28th. In order to complete the case, I may mention that the suprarenal capsules were found in the state anticipated, the disease being evidently furthest advanced in the left capsule. On the left side of the spine, the intervertebral substance had been torn, apparently by violence, from the upper surface of the first lumbar vertebra for about two-thirds of its depth, and in front of the spine, extending from the seventh dorsal to the third lumbar vertebra, was an abscess, containing about two ounces of thick curdy pus. The bodies of the vertebræ involved were denuded and rough. Both lungs were extensively adherent to the walls of the thorax, and the apices presented small masses of obsolete cretaceous tubercle, surrounded by consolidated pulmonary tissue.

and prostration have for the most part been out of all proportion to the severity of the more obvious complaint.

II. *External Signs.*—The external signs of Addison's disease are found in the peculiar features of the discolouration of the skin, which when present in a fully developed form is, I need scarcely say, the most striking symptom of the disease: and has indeed, in most cases, been the main ground on which it has hitherto been diagnosed. This discolouration of skin is generally of a dusky or yellowish-brown, but sometimes rather of an olive or greenish-brown hue, and gives to the persons in whom it is well marked the appearance of belonging to one of the darker races of mankind. The shade is not uniform on all parts of the skin: being generally deeper on the face, neck, and hands, and in the axillæ and groins, than over the general surface of the body. The penis and scrotum and the nipples and areolæ are usually the darkest parts, and their discolouration may be regarded as among the diagnostic external signs of Addison's disease, although it is true that they have sometimes been absent in otherwise well marked cases. If the patient have been blistered, or have sustained any other superficial abrasion of the skin, the injured surfaces are always darker than the surrounding parts; but the cicatrices of deeper injuries usually remain pale, or, at most, are bordered by a dark ring. Very often, also, small, well-defined specks or patches, resembling black freckles, are found upon the face, neck, arms, or trunk; but, so far as I have observed, they appear only on the already discoloured parts. Although the discolouration is generally most marked on certain parts of the body, and may even exist on some parts whilst the skin is in other places of normal hue, there is rarely or never, excepting when the boundary coincides with that of some former injury, any definite line of demarcation between the discoloured and normal portions of the skin, but the former fade insensibly into the latter. In strongly marked cases, the characteristic discolouration is also frequently found upon the lips in the form of an irregular stain running lengthwise, and upon the buccal mucous membrane and sometimes also upon the gums and tongue, in the form of patches or mottled stains; but the discolouration on the tongue, in the only cases I have seen, has assumed a somewhat purplish instead of the usual brownish hue. These discoloured patches inside the mouth may perhaps, when present, be considered as the most decisive of the external diagnostic signs of Addison's disease; they afford a further analogy between the discolouration which takes place in Addison's disease and the natural colouring of the darker races, several individuals of these races who have come under my observation having presented similar dark stains on these parts. It is, on the other hand, important to remark that the conjunctivæ always retain their normal hue, and in the more deeply discoloured cases their pearly whiteness presents a striking contrast to the dusky hue of the face.—*British Medical Journal*, July 7, 1866.

(*To be continued.*)

HOSPITAL NOTES AND GLEANINGS.

Excision of the Hip joint.—In the beginning of March there were discharged from the Charing-cross Hospital two children, whose hip-joints Mr. Barwell had excised within a week of each other. On that occasion he made remarks to his class, which we abbreviate below.

Having operated a goodly number of times, Mr. Barwell said he would epitomize the results of his experience under three heads—1. Choice of case. 2. Mode of operation. 3. After-treatment.

1. When the bone is carious and dislocated there is no doubt as to the propriety of operation. When the head of the femur is not dislocated, but carious, producing abscesses, especially inside the pelvis, the sooner the caput femoris, and, if there be pus in the pelvis, the floor of the acetabulum, be removed the better. When, from neglect, the dislocated thigh-bone has become anchylosed to the dorsum ilii, in such position as to render the thigh a useless incumbrance, the head or neck of the bone should be cut through.

2. Concerning the mode of operation very few words need be said. It is most important to make the incision so that during after-treatment, while the patient lies on his back, there shall be a free depending opening; and, moreover, it is very desirable to inflict as little injury as possible on the surrounding soft parts. Mr. Barwell makes but one semilunar incision, beginning above

the trochanter, passing behind it, and ending on the outside of the femur. This gives abundant room for attacking either the top of the femur or the pelvis.

3. Of certain points in the after-treatment the two cases in question gave interesting illustration. From Lewis N——, aged seven, operated on 20th May, 1865, a large portion of the pelvis—viz., the whole floor of the acetabulum—was removed for pelvic abscess, and a quantity of pus discharged through the opening. On the fourth day, discharge from the wound suddenly ceased; the edges were all separated and opened out with the finger, and a drainage tube carried to the bottom of the wound. It is, in Mr. Barwell's opinion, very important in these cases to watch for any sudden and premature suppression of pus-flow. Unless the secretion be quickly re-established, such stoppage is sure to be followed by pyæmia, osteomyelitis, or both. The latter may generally be prevented or forestalled by attention to this point. In spite of keeping up a free discharge, some pus found its way along the sheath of the rectus, and was evacuated in front of the thigh.

The other boy, Robert S——, aged six, operated on May 27th, got well without any bad symptom, and was walking about without support sooner than N——. But there is an important difference in the condition of the two boys. S—— was a restless, obstreperous fellow, whom no machinery could long keep in one position; but he always chose such postures as should keep the limb adducted. N—— was a quiet boy, and could be restrained, so that the limb was kept abducted. Now in the earlier stages of hip-disease, indeed in all pelvic postures, adduction means shortening, abduction lengthening. S——'s limb (adducted) was after cure two inches and a quarter short; N——'s (abducted), although more bone was removed, was barely three quarters of an inch short.

Mr. Barwell is adopting, in his after-treatment, even more abduction than he has formerly used, believing that he shall cause the limbs to appear of equal length.

In his last five cases of excision of the hip performed at Charing cross Hospital during 1864-65, Mr. Barwell has lost one from exhaustion, and abscess opening into the rectum. One is walking about with support; three without support.—*Lancet*, May 12. 1866.

Novel Treatment of Gonorrhœa and Gleet.—There is probably no ailment amongst the less severe disorders incidental to mankind the treatment of which more frequently causes trouble and anxiety to the surgeon than does gonorrhœa. Under the influence of injections a patient will apparently completely recover, and, just as he is congratulating himself upon his good fortune, the recurrence of a slight discharge in the morning or after a little over-exertion brings him back to the surgeon with a long face and gloomy forebodings. Every one has met with such cases. Perhaps the unfortunate individual is engaged to be married, or he is about to start on a continental tour, and endless annoyance is created by this return of his ailment. We have frequently wondered that, amidst the numerous advances of our art in this day, some more effectual plan of treatment has not been devised for this condition. Injections of various kinds—chloride of zinc, nitrate of silver, acetate of lead—will all, there is no doubt, exert a powerful influence upon the inflamed membrane; but after their employment there is so often a tendency to recurrence of the malady that it is evident the great desideratum of an effectual cure is yet wanting.

We have been interested lately in observing a new process which is now being tried by Mr. Henry Thompson at University College Hospital, and which may possibly be found of much service. Believing that the imperfect action of injections depends upon the very short time that they are in contact with the mucous membrane, Mr. Thompson conceived the idea of applying the astringent in such a form as would enable it to remain for a much longer period in contact with the inflamed surface. Under his direction Messrs. Bell and Co. have constructed "soluble bougies," two or three inches in length, made of cocoa butter, containing the drug it is wished to apply. They are cast in moulds, are perfectly firm and smooth, and may be used in any length, but that named has been deemed the best. A soluble bougie is equal in size to about No. 8 or 9 of the catheter scale, and may be introduced (having been previously oiled) by the patient himself into the urethra, where the material gradually melts in the space of about ten minutes. The patient is directed to slip one of these bougies into the passage on going to bed.

After trying many methods for retaining the bougie *in situ*, Mr. Thompson has adopted the following: A piece of adhesive plaster is cut, nearly an inch wide and five inches long. A piece of Taylor's stout lint, of the same size, is rolled up into a little pad and laid on the centre of the plaster, which is warmed, and applied along the lower surface and dorsum of the penis, the prepuce meanwhile being fully retracted. A second strip of plaster, half the width of the first, is then put closely around the glans penis transversely. The bougies are made to contain either a quarter of a grain of nitrate of silver, a grain of tannin, two-thirds of a grain of acetate of lead, or ten grains of nitrate of bismuth, as astringents; while others are sedative also, and contain two grains of opium, or two of belladonna. Other materials can, of course, be employed. By this plan Mr. Thompson has satisfied himself that the active agent is kept for several hours in contact with the urethral surface, and is, morever, necessarily squeezed into the lacunæ, which often, doubtless, escape being acted upon by injections. It is by many supposed that these lacunæ, from harbouring the discharge and escaping treatment, are the main cause of the persistence of gonorrhœa. However that may be, there would seem little doubt that this mode of treatment permits the effectual application of the astringent, and thus promises better results than can be attained by the transitory action of an injection. It is as yet too early to pronounce a decisive opinion of this process; but it is very ingenious, and we shall watch the results with interest.—*Lancet*, May 12, 1866.

CHOLERA.

Treatment of Cholera in the London Hospital.—This continues as unsettled and empirical as before stated. It is said in the *Med. Times and Gaz.* (Aug. 25th), that at the London Hospital Dr. Fraser is now ordering for his patients a mixture containing chlorate of potash and dilute hydrochloric acid in camphor mixture. Dr. Clarke has treated some of his new patients with the tincture of the sesquichloride of iron and quinia. Dr. Davies still gives calomel.

The same journal of a later date (Sept. 1), states that at the London Hospital the injection of fluids into the veins is still being tried in a few cases and in two the results have been favourable. The subcutaneous injection of water has been tried in a patient in collapse. The patient died. One patient recovered who was treated by draughts of warm water.

In the *Lancet* (Aug. 18th), it is stated that Dr. Fraser, in the London Hospital, "has been making a trial of the much-vaunted "Rubini" specific. This, as our readers may remember, consists of a highly concentrated solution of camphor in alcohol, the dose being from five to twenty minims, every five minutes, on sugar or in water. The solution was used in, perhaps, seven or eight cases. It was found, however, that the camphor was deposited and collected upon the tongue. As a result it clogged the mouth, and in one case of severe collapse, where it had been given in ten-minim doses every five minutes, it required to be removed with the handle of a spoon. Patients in collapse were not able to suck sugar, and the addition of water caused a precipitate of the camphor, which, if swallowed, was immediately rejected in a small, round, gummy mass. The patients in several instances begged that its use might be discontinued on account of the distress which it occasioned. In some cases it was tried every quarter or half hour, but always with the same result, the camphor being rejected by vomiting. As the remedy was found so impracticable it has been since discontinued.

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Ice-Bag Treatment of Cholera.—W. W. Reade, in a communication to the *Lancet* (Aug. 18th) states: "I see that the *Lancet's* correspondent from Southampton has already stated that the ice-bag treatment has been abandoned in the town, and that "impartial observers consider it worse than useless." It was tried here under Dr. Chapman's personal superintendence. He had six cases under his charge. Of these two died; and as he left the town without giving me instructions to pursue his treatment in the four other cases (one of whom was in a dying state)—indeed, without informing me of his intention to leave the town, I did not pursue his treatment, nor had I any desire to do so. The ice-bag was applied to the spine of one patient (Eliza A——) continuously for twenty-four hours, by his direction, although she did not cease to vomit at short intervals all that time, and although

she repeatedly implored that it might be taken off. Dr. Chapman, who at first was going to cure cases in collapse with his ice-bag, *now* states that it must be applied in an early stage of the disease; but in this hospital we have been able to save all our patients in an early stage of the disease by means of remedies which are less troublesome and more humane."

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Treatment of Cholera in the Hospitals in Paris during the Recent Outbreak.—This seems to have been as unsettled and empirical as on former outbreaks, according to the following account copied from the *Journal of Practical Medicine and Surgery*, Nov. 1865.

"The remedies prescribed for cholera in the civil hospitals of Paris differed but slightly from those administered in 1832, in 1849, and in 1853–54.

"In the spontaneous vomiting incidental to the first stage of the malady, or the emesis induced by stimulant beverages, seltzer-water or ice were prescribed, or ipecacuanha in 15 or 30 gr. doses, and sometimes a mustard poultice was applied over the stomach. In order to check obstinate diarrhœa, MM. Horteloup, Vigla, Barthe, and Hérard had recourse to bismuth, diascordiam, and enemas containing laudanum; sulphate of soda was also, but more sparingly, used as a means of checking the premonitory diarrhœa. Dr. Horteloup prescribed a kind of paste, consisting of five drachms of bismuth mixed with syrup, one-tenth of which was exhibited every two hours. At the hospital Saint-Antoine the following prescription, originally suggested by Aran, was found beneficial: ℞. Bismuthi trisnitratis; Diascordii (confect. opii) āā ʒj; Mist. acaciæ, ℥v.

"To be taken in teaspoonfuls at one or two hours interval.

"During the cold stage, tea and rum, acetate of ammonia, and the chartreuse elixir were frequently prescribed to induce reaction. M. Vigla did not wait until refrigeration had set in, but applied at once a blister over the epigastric region, exhibited tea and rum, and if this was rejected, immediately resorted to the following prescription, from which he had obtained good effects: ℞. Mist. acaciæ, ℥iv; Liq. ammon. acetatis, ʒij; Tinct. anisi stellati, ʒj; Ætheris sulphurici, ♏xv.

"At the same time, and in order to check the diarrhœa, enemas were administered consisting of four ounces of water, ten drops of laudanum, and a drachm of extract of rhatany, until one was retained by the intestine. Cupping along the spine and mustard poultices were resorted to to relieve cramp.

"In the stage of algor M. Horteloup applied electricity, with Breton's apparatus, one conductor being placed in contact with the spine, and the other opposite the insertions of the diaphragm.

"M. Gubler, of Beaujon—the hospital most severely visited at the outbreak of the epidemic—at first prescribed, in the early stages of cholera, warm drinks, punch, tea and rum, wine, &c. But he soon discovered that this class of fluids generally defeated their own purpose, and increased the tendency to emesis. He replaced them by ice and cold drinks, and found that iced beer especially was well tolerated by the stomach, besides being more grateful to the patients. He, therefore, confined himself to this beverage, and also remarked that lime water acted most favourably in checking the vomiting. It was the remedy he has found most efficacious for the purpose. He also attempted the introduction of sedatives into the system by the hypodermic method; but the absorbents being paralyzed, this plan proved inefficacious.

"The *Gazette des Hôpitaux* speaks favourably of the following mixture, prescribed at La Charité by M. Parrot in the female ward: ℞. Chloroformi, ʒj; Syr. cinchonæ, ʒv; Mist. acaciæ, ℥iv.

"The dose is a tablespoonful every half hour at first, and the amount of chloroform exhibited is reduced in proportion to its effect in arresting the emesis, and the dose is taken at longer intervals. Strong wine was prescribed in order to facilitate and keep up the reaction. Friction was seldom resorted to, and the patient was merely warmed by the application of heated cloths. Ice and cold drinks were freely allowed as soon as reaction had appeared, and beef-tea was administered if the patient desired it.

"If spasmodic contraction persisted in the epigastric region, together with pain, M. Parrot had recourse to blisters, and often prescribed ipecacuanha as a means of arresting the vomiting.

"At the Hôtel-Dieu, the management of the stage of reaction varied. M. Barth, in

order to avert secondary congestion, had recourse to depletion; M. Vigla prescribed bark and quinine, and M. Horteloup hot or iced coffee, according to the degree of irritability of the stomach. This gentleman applied, in addition, rubefacients to the nape of the neck, to the epigastric, or to the præcordial region, according to the tendency of congestion to the brain, heart, or stomach.

"The diet was carefully attended to. A couple of grains of quinine were taken before each meal, and beef-tea or soups were given at as early a period as possible, with wine and water, or even undiluted claret.

"The measures instituted at the Military Hospital of Gros-Caillou, by Mr. Worms, were of a more original character. In premonitory diarrhœa this practitioner exhibited every hour four ounces of sweetened decoction of salep root, with four, six, or eight drops of concentrated sulphuric acid. The patients were further directed to rinse their mouth with this fluid after each draught. Two or three glasses of the beverage in general check the diarrhœa, and a fourth dose is seldom required. Mr. Worms did not object to the simultaneous use of white wine or champagne, but strictly prohibited beer, brandy, or alkaline mineral waters.

"In confirmed cholera his practice was equally simple. The patient was left in complete repose. No frictions were prescribed unless the cramps were productive of much pain, and every half hour a glass of the lemonade above described was administered immediately after vomiting.

"Wine and ice were supplied at discretion.

"Mr. Worms remarked that the lemonade was the most efficacious remedy for diarrhœa, but that it seemed on the contrary to promote emesis. The persistency of the latter symptom was in general, in his opinion, a favourable augury of the final issue of the case.

"No novel features of treatment were supplied by private practice, nor by the communications forwarded to the medical press from the departments, or from abroad.

"It is unnecessary to advert to the preventive measures recommended by mere quacks, and the prophylactic treatment is generally based on the exhibition of laudanum, bismuth, the use of warm clothing, and chamomile tea flavoured with spirit or with peppermint.

"M. Jobert de Lamballe prescribed for diarrhœa, attended with pain, five or six pills a day, each containing one-sixth of a grain of extract of opium, and night and morning an enema of: ℞. Aquæ, ℥iijss; Amyli, ℥ij; Laudan. liq. Sydenhami, ♏x.

"If the diarrhœa was painless, he recommended half a drachm of the conf. opii, or a mixture containing gr. xv of extract of rhatany. He believed that the confection of opium was serviceable only when the diarrhœa was not accompanied by colic.

"The greatest benefit has been derived from the mixture of bismuth and confection of opium, described in the early part of the present article. In some instances M. Ricord's formula has been used with success, viz: ℞. Aquæ destill. ℥iv; Album. ovi, j; Syr. morph. acetatis, ℥j.

"To be taken in tablespoonfuls at intervals of one or two hours.

"In severe cholerine, M. Perrochet's prescription acted more promptly:—

"1. Exhibit every half hour, or every hour, according to the urgency of the case, a tablespoonful of the following mixture: ℞. Aq. lactucæ, ℥iij; — menth. pip., ℥iv; Extr. monesiæ, gr. xv; Syr. morphiæ acetatis, ℥j.

"2. Apply over the abdomen flannels impregnated with strongly camphorated oil.

"3. Frictions over the limbs twice in the course of an hour with camphorated liquor ammoniæ.

"4. Warm coverings, hot water bottles, &c.

"For children, Quesneville's bismuth paste is prescribed daily, one teaspoonful before each meal, or ten ounces of Sydenham's white decoction, with the addition of one or two drachms of bismuth.

"M. Guersant recommended for cholerine in children: ℞. Mist. acaciæ, ℥iv; Spirit. ætheris sulphur. ℥ss; Acidi sulphur. ♏viij.

"To be taken in teaspoonfuls at intervals of an hour.

"When in adults cholera reached the cold stage, stimulants and counter-irritation were the remedies most generally trusted to. Æther, syrup, or pearls of æther, liq. ammon acetatis, carbonate of ammonia, mustard poultices, blisters, turpentine stupes applied along the spine, mustard baths, wrapping up in woollen blankets, &c., were the elements of all the various sys-

tems of treatment in daily use. Tea and rum were also exhibited in large quantities, but were frequently rejected by the stomach, and were, therefore, less reliable than stimulant mixtures administered in teaspoonfuls, which were more easily retained if a piece of ice were given after each dose.

"M. Gendrin prescribed half an ounce of spiritus Mindereri in four ounces of peppermint water, to which were added a drachm of sulphuric æther, and ten or twenty drops of laudanum. As soon as he found that the veins began to fill under the influence of the stimulant, he took from the arm a tablespoonful or more of blood, if that liquid was in a sufficiently fluid state to flow from the wound.

"It is surprising that liquid ammonia was not more freely used in this stage of the affection. A mistake which occurred in 1849 showed the great power of this remedial agent in a desperate case. A corporal of the Garde Mobile, who was cold and pulseless, was prescribed a mixture containing two drachms of the liquor ammoniæ acetatis. The apothecary, instead of the substance prescribed, used the liq. ammoniæ fortior. Two or three tablespoonfuls only of this extremely unpleasant compound were exhibited, but reaction set in, and the patient promptly recovered. In India, we are told, camphorated brandy is often forced down the patient's throat with equal success. The formula recommended by Noel, a physician who in the last century accompanied the French army in India, might be advantageously resorted to. The following is its composition, such as it is reproduced in the *Union Médicale:* ℞. Aq dest. melissæ, ℥iijss; Liq. ammoniæ fortioris, ℥ss; Ol. anisi, ♏v; Syr. corticis aurant., q.s.

"To be taken in tablespoonfuls every half hour.

"Dr. Carrière, physician to the Comte de Chambord, forwarded to the same journal a formula of an analogous description, viz: ℞. Aq. destill., ℥iijss; Liq. ammon., gr. xv.—xxx; Syrupi, ℥j; Tinct. corticis aurant., ℥j.

"This preparation should be exhibited in spoonfuls at intervals varying according to the requirements of each case, and it acts both as a stimulant of the nervous system and as a fluidifier of the blood."

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Saline Injections in Cholera.—Mr. Colson, physician at the Hospital Beauvais, read a paper at the Academy on Tuesday last, containing an account of his own experiments on the subject. The liquid he used was composed of 1250 parts of distilled water, twelve parts of muriate of soda, eight parts of lactate of soda, and three parts of phosphate of soda, at a temperature of 42° centigrade. This injection into the median basilic vein was followed in many cases by a very rapid improvement in the pulse and appearance of the patient, but unfortunately this improvement was not permanent, and the patients soon collapsed into the same, or a worse state than before. In one case the injection was repeated five times with success. The general opinion of the Academy seemed to be against this mode of treatment, for which, by-the-by, M. Colson does not claim the merit of novelty.—*Lancet*, Sept. 1, 1866.

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Progress of Cholera.—In England the cholera is everywhere abating. In *London* the number of deaths from cholera and diarrhœa was as follows:—

	Cholera.	Diarrhœa.
Week ending Aug. 4,	1053	354
" " " 11,	781	264
" " " 18,	455	194
Sept. 1,	193	123

In *Liverpool*, during the month of August the deaths from diarrhœa and cholera were as follows:—

	Diarrhœa.	Cholera.
Week ending Aug. 4,	88	101
" " " 11,	75	126
" " " 18,	63	157
" " " 25,	69	146

In *Paris* there has been recently an increase in the number of cases.

In various parts of *Bohemia* the cholera continues its ravages.

At *Brüme* 1100 Prussian soldiers are said to have died of the disease within the last two months.

At *Genoa* recent accounts state the disease to be on the increase.

At *Pesth* it prevails to such an extent that the Empress of Hungary has left the place.

At *Breslau* 2000 deaths from cholera have taken place in the course of a few weeks.

MEDICAL NEWS.

DOMESTIC INTELLIGENCE.

Progress of Cholera. — Everywhere in the United States cholera is abating. The following table shows the mortality in Philadelphia for the past month from cholera and bowel affections:—

1866.	Mortality in Philadelphia from						
	Cholera Infantum.	Diarrhœa.	Dysentery.	Cholera Morbus.	Cholera.	Total Bowel Affections.	Total Mortality from all diseases.
Week ending Sept. 1st,	49	17	14	6	58	144	430
" " " 8,	21	4	11	9	41	86	358
" " " 15,	29	8	10	10	38	95	331
" " " 22,	15	4	11	6	35	71	313
" " " 29,	14	10	9	12	45	90	311

In *New York* the deaths were as follows:—

	Cholera.	Cholera Morbus.	Diarrhœal Diseases.	Cholera Infantum.	Total Mortality.
Week ending September 15,	32	16	83	51	589
" " " 22,	49	11	76	55	560

At *St. Louis* the deaths from cholera during the week ending Sept. 14th, was 272.

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Memorandum.—For the information of persons desirous of entering the Medical Corps of the Army, we publish the following extracts from laws of the United States, act of Congress, approved July, 1866, sent to us by the Surgeon General:—

Sec. 17. *And be it further enacted*, That the Medical Department of the Army shall hereafter consist of one Surgeon General. * * One Assistant Surgeon General. * * One Chief Medical Purveyor and four Assistant Medical Purveyors. * * Sixty Surgeons, with the rank, pay and emoluments of Majors of Cavalry. One hundred and fifty Assistant Surgeons, with the rank, pay and emoluments of First Lieutenants of Cavalry, for the first three years service, and with the rank, pay and emoluments of Captains of Cavalry after three years service. * * * and all the original vacancies in the grade of Assistant Surgeons shall be filled by selection by examination.

The number of vacancies now existing in the Medical Corps of the U. S. Army, is sixty, forty-six of which are original vacancies created by the act of Congress approved July 28, 1866, as quoted above.

All candidates for appointment in the Medical Corps must apply to the Surgeon General, U. S. Army, for an invitation to appear before the Medical Examining Board. The application must be in the handwriting of the candidate, stating age and birthplace, and be accompanied by testimonials from professors of the college in which he graduated, or from other physicians of good repute. If the candidate has been in the medical service of the army during the war, the fact should be stated, together with his former rank, and time and place of service, and testimonials as to qualifications and character from the officers with whom he has served should also be forwarded.

Candidates must be graduates of some regular Medical College, proof of which must be submitted to the Board before examination.

The morals, habits, and physical and mental qualifications of each candidate will be subjects for careful examination by the Board, and favourable report will not be made in any case in which there is a reasonable doubt.

The following will be the general plan for examination.

1. A short essay, either autobiographical or upon some professional subject—to be indicated by the Board.

2. Physical examination. This will be rigid, and each candidate will be required to certify "*that he labours under no mental or physical infirmity, nor disability of any*

kind, which can in any way interfere with the most efficient discharge of his duties in any climate."

3. Examination as to general aptitude and education.

4. Written examination on anatomy, physiology, hygiene, surgery and practice of medicine.

5. Oral examination on each of the above mentioned subjects, and also on obstetrics, general pathology, chemistry, toxicology, medical jurisprudence and materia medica

6. Clinical examination, medical and surgical, at a hospital.

7. Performance of surgical operations on the cadaver.

The Board will deviate from this general plan whenever necessary, in such manner as they deem best to secure the interests of the service.

The Board will report the merits of the candidates in the several branches of the examination, and their relative merit in the whole, according to which, if vacancies exist within two years thereafter, they will receive appointments and take rank in the Medical Corps.

An applicant failing at one examination, may be allowed a second after one year, but not a third.

No allowance will be made for the expenses of persons undergoing examination, as this is an indispensable prerequisite to appointment, but those who are approved and receive appointments, will be entitled to transportation on their obeying their first order.

The pay and emoluments of surgeons and assistant surgeons are shown by the following table :—

	Pay per month.	No. of rations per day.	Amount of rations per month.	SERVANTS.					Aggregate amount receivable.	FORAGE FURNISHED FOR HORSES WHEN ACTUALLY KEPT	
				No. for which pay is allowed.	Am't allowed for pay per month.	Am't allowed for clothing per m'th.	Am't allowed for rations per m'th.	Total amount allowed per m'th.		In time of war.	In time of peace.
Assistant Surgeon, under three years' service .	$53 33	4	$36	1	$16	$6 50	$9	$31 50	$120'83	2	2
Assistant Surgeon, over three years' service .	70 00	4	36	1	16	6 50	9	31 50	137 50	3	2
Assistant Surgeon, over ten years' service . .	70 00	8	72	1	16	6 50	9	31 50	175 50	3	2
Surgeon, under ten years' service	80 00	4	36	2	32	13 00	18	63 00	179 00	4	2
Surgeons, over ten years' service	80 00	8	72	2	32	13 00	18	63 00	215 00	4	2

In addition to the above, Surgeons and Assistant Surgeons are allowed an additional ration per day, after the termination of every five years' service.

Quarters and fuel, or commutation therefor, are also furnished to Medical Officers.

JOS. K. BARNES,
Surgeon General, U S. A.

SURGEON GENERAL'S OFFICE, Aug. 9, 1866.

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Insufflation of Medicated Powders in Gleet.—Dr. JOHN J. O'REILLY writes to us under date Louisville, Sept. 12th, 1866, as follows :—

In the *Medical News* for Sept., 1866, I noticed an article on insufflation of medicated powders in gleet, and also an account of the presentation of an instrument for that purpose by Mr. Ricord to the Medical Society of Paris. If the application of such powders by such an instrument as you state deserves any credit, I think there is no necessity for giving it to European surgeons.

I used the same instrument, and made it myself, three years ago, in the U. S. A. Venereal Hospital, at Nashville, Tenn. Having charge of the venereal wards, I tried for some time to apply medicated powders to the mucous membrane of the urethra. After trying various means. I at last attached an open catheter (or a catheter open at both ends) to a common syringe, making an opening in the body of the syringe near the attachment of the catheter, so that when the piston of the syringe was drawn out the powder would not follow into the vacuum. This I found to do very

well. After using it for some time, I tried to simplify it by fitting a piston to a plain open catheter. This I also found answered its purpose, but still each instrument was found to be preferable under certain circumstances. The simple catheter and piston instrument is better for those cases in which by introducing the catheter we can ascertain with certainty that the inflammation is confined to a limited portion of the mucous membrane of the urethra; but where we suspect chronic congestion with slight irritability, the catheter attached to the syringe is to be preferred: for by it we can spread the powder over a greater surface and in much smaller quantities.

This instrument I used in Nashville at time stated in presence of Surg. Wm. M. Chambers, U. S. V., and Surg. L. Beckwith, 38th Indiana Infantry. Surg. Chambers is now in Charlestown, Ill., and Surg. Beckwith at Jeffersonville, Ind.

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Cryptogamous Origin of Intermittent Fevers.—The editors of the *Atlanta Medical Journal* state that a friend led by the experiments of Dr. Salisbury, is investigating this subject, and will probably communicate something valuable in regard to it.

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Ovariotomy in California.—Dr. Joseph Wythe, late Surgeon U. S. Vols., records (*Pacific Med. and Surg. Journal*, August, 1866) a case of ovariotomy successfully performed by him, June 14th last, in San Francisco.

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Medical Department of the University of Nashville.—Dr. Joseph Jones has been appointed Professor of Pathology in this institution.

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Atlanta Medical College.—At the annual commencement on the 31st August last, the degree of M. D. was conferred on 29 candidates.

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The Physician's Visiting List, Diary and Book of Engagements for 1867.—Messrs. Lindsay & Blakiston have issued this highly useful volume.

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Obituary Record.—Died, in Boston, Sept. 15th, 1866, of cholera, after an illness of only a few hours, Augustus A. Gould, M. D., a very eminent physician and accomplished naturalist, and late president of the Massachusetts Medical Society.

FOREIGN INTELLIGENCE.

Cholera Hospitals.—The following is the substance of a report drawn up by the Council of the Epidemiological Society, and is of unusual interest at the present time.

I. There appears to be a general concurrence of opinion, expressed or implied, that under certain circumstances and conditions cholera is liable to be communicated from person to person; the liability being usually in proportion to the crowding of many persons together, the defective ventilation of apartments, and the neglect of thorough cleanliness in respect of person or abode.

In addition to the possible risk of the extension of the disease from this source, the alarming character of the symptoms, and the necessity for unremitting attendance upon the sufferers, are calculated to produce terror in the minds of spectators, and thus strongly predispose them to be attacked during an epidemic season.

For these reasons the opinion is very generally held that it is unadvisable that cholera patients should be admitted into wards which are occupied by other sick inmates.

The experience, however, of some of the metropolitan hospitals in past epidemics shows that, due attention being paid to sanitary arrangements, cholera patients may be received, in limited numbers, into the general wards without injurious results either in the other sick or to the ordinary attendants.

No instances have been referred to, in the evidence before the Council, in the opposite direction—viz., of the disease having spread to the other inmates of a ward in a well-regulated hospital.

II. With respect to the second query, the experience of the metropolitan physicians who have favoured the Council with replies appear to be that, with proper precautions, cholera patients may be admitted into separate wards in general hospitals or infirmaries without undue risk of the extension of the malady to the other inmates of the institution.

This opinion is shared by all the respondents who have had experience of the disease in tropical countries.

It would have been very desirable to have been informed of the results on this point in some of the military and naval hospitals in this country and also abroad.

The precautions above referred to are these; (*a*) Ample space to each patient; not less than 1500 or 2000 cubic feet. (*b*) Thorough ventilation of the wards at all times, both night and day. (*c*) Immediate disinfection and removal of the excreta, soiled linen, &c. (*d*) A separate staff of nurses.

III. The reply to the third query depends much on the opinion formed in respect of the two former questions If cholera patients are not admissible into general hospitals or infirmaries under any conditions, it is obvious that some extemporized and special arrangements must be provided for the reception of the destitute when attacked.

But even when they are admitted, there are various circumstances in which it will be advisable or necessary that special hospitals should be provided, *e. g.* (*a*) When general hospitals or infirmaries are at a distance from the seat of the actual or apprehended outbreak. (*b*) When there is a want of accommodation, with due regard to the ordinary patients, or when the accommodation is unsuitable or objectionable.

In selecting the site of special hospitals, the following points require to be attended to: (*a*) Nearness, if possible, to the chief seat or seats of the outbreak. It is important that cholera patients should not have to be carried far. There is, moreover, great risk in moving patients in, or verging to, the state of collapse. (*b*) Airiness, and freedom from intrinsic or contiguous sources of atmospheric pollution. (*c*) A dry soil and raised situations are, of course, to be always preferred to a low and damp one.

Amid the crowded districts of a large town, it appears preferable that several small and suitable hospitals, or "houses of recovery," should, if possible, be established in different localities, rather than one or two large hospitals for the reception of a large number of cholera patients.

The remark that the presence of an experienced staff of medical officers in general hospitals, and the existence of more complete appliances of every sort in them than is likely to be provided in extemporized special hospitals for the treatment of cholera patients, are marked advantages in favour of the former, deserve consideration.

The general conclusions of the Council are these:—

1. That it is, on the whole, unadvisable that cholera patients be admitted into the ordinary wards of general hospitals or infirmaries.

2. That cholera patients can be safely admitted into special wards in general hospitals, due precautions being taken; and therefore that it is desirable, as an important means of providing accommodation for the destitute when attacked, that the authorities of these institutions grant this valuable benefit to the public.

3. That it will be often necessary that special hospitals be provided in aid or in lieu of general hospitals and infirmaries.

In addition to these arrangements for the accommodation of the poor when attacked with cholera, the Council would recommend that places of refuge be provided for the temporary sojourn of some of the unattacked inmates of unwholesome dwellings and localities where the disease has appeared.—*Lancet*, July 28, 1866.

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Trichinæ.—Dr. Fiedler says that the trichinæ may find their way into the muscles through the current of blood, is proved by the facts: that he has frequently found trichinæ in coagula of the right auricle and ventricle; and that at times, in the most distant muscles, trichinæ are found not exceeding in size those found in the abdomen.

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Auenbrugger.—On the 4th of June last, the Vienna Medical Faculty celebrated their sixtieth annual meeting. Dr. Moritz Frey delivered an address "On the Life and Writings of Leopold Auenbrugger of Auenburg." The progress of modern medicine, he said, was in part due to Auenbrugger, whose discovery of percussion gave it a physical direction. Auenbrugger was an Austrian of whom we may well be proud, and a member of this Society; but sad is it to say that no memorial graces his last resting place; and in the Hall of the Medical Faculty, neither monument, picture, nor inscription. *Nemo propheta in patriâ* is nowhere truer than in Germany; and Auenbrugger lived to see that his immortal discovery was first recognized in France. He was born at Gratz, in November, 1722, the son of a flourishing inkeeper there. He studied medicine in Vienna, and was received into the Faculty in 1757. He then became physician to the Spanish hospital erected there by Charles VI. for poor sick

Spaniards, etc. There he laboured hard. According to Stoll, he had great experience in paracentesis thoracis. He died in 1809. None of his cotemporaries, with the exception of Stoll, paid any attention to his discovery. After Stoll, it was forgotten in Germany, and remained so for thirty years, until Corvisart, in 1808, again brought it into notice. The *Inventum Novum* was translated for the first time into German in 1843, by Skoda. The best accounts of Auenbrugger's life have been given by Professors Olan of Gratz, and Lebert of Breslau.—*British Medical Journal*, July 21, 1866.

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Italian Registration Returns.—Amidst the bustle of war the Italian Government has found leisure to publish a very useful document—the Population Returns of the Kingdom of Italy for the Year 1864—a quarto volume of between 500 and 600 pages, which enters into a detailed exposition of the vital statistics of every portion of the united kingdom. The entire population of this amounted in 1864 to 22,291,180 inhabitants. 177,282 *marriages* were solemnized during the year; and on examining into the condition of the contracting parties in this respect, it is found that, while among the men there were 16 widowers to 84 bachelors per cent., among the women there were but 10 widows to 90 spinsters. In frequency the marriages which take place in the country (8.28 per 1000 inhabitants) exceed those that take place in towns (7.61), the mean (8 02) being 1 per cent. less than in the year 1863. Italy, with 1 marriage for 122 inhabitants, exceeds in this respect France, Spain, and Norway, in which countries there is a marriage in every 130; is nearest England, with 1 marriage for 125, and below Saxony, with 1 to 117, and Russia with 1 to 95 inhabitants. The mean duration of marriages was found to be 21 years 8 months—*i. e.*, 21 years and 3 months among the rural populations, and 22 and 23 years in the civic populations. *Births.*—There were 845 454 living children born, two-thirds in the rural and one-third in civic districts, the males exceeding the females by 26,232 There were 802,376 legitimate, and 43,078 natural births—*i. e.*, 5.10 per cent.—the highest number (7 41) being found in Calabria, and the lowest (2.25) in Sardinia. In this matter Italy is better, with her 1 illegitimate birth to 18.66 legitimate births, than any other country, except Holland, where they are 1 to 22. Taken together, there took place 3.95 births for every inhabitant, it being found in Italy, as elsewhere, that a greater number of births took place in the regions in which the mortality was greatest. The legitimate births occurred in proportion of 4.59 for every married couple, Sicily exhibiting the greatest amount of fecundity (5 32). In 1864 there were also 14,209 (8269 male, 5940 female) children born dead, giving 16 81 born dead per 1000 births, the numbers being, however, 22.11 per 1000 in the urban, and only 14.65 in the rural districts. The *deaths* in 1864 amounted to 659,063, being a diminution of 4 03 per cent. of those of 1863. The rate of mortality to the population was 2.98 per cent.—3.17 in the towns, and 2.89 in the country. The deaths of males to those of females were as 107 to 100. The relation of the deaths to the births descended from 80 per cent. in 1863 to 78 in 1864. Of the deaths 54 per cent. took place under 15 years of age, 12 per cent. in nubile adults, 21 per cent. in married persons, and 13 per cent. among widowed persons. Deaths from violence are returned at 6827 (5475 male, 1348 female)—viz: 4082 from accident, 646 suicide, 5 duelling, 2006 homicide, and 88 execution. The *suicides* amounted to 2.96 per 100,000 inhabitants, Spain being the only country having a less number than Italy, and most countries having a far higher proportion. The 646 suicides took place among 515 men and 130 women. More than a fourth of the suicides (174) preferred drowning, 142 firearms, 99 hanging, 9 asphyxia, and 42 poison. The greater number of suicides (202) occurred in summer, and especially in the months of July and August.—*Med. Times and Gazette*, Aug. 18, 1866.

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New Mode of Preserving Meat.—At a recent meeting of the Pharmaceutical Society, at Edinburgh, Mr. J. Mackay brought before the meeting a new method of preserving beef, mutton, and other animal substances used for food, in a perfectly fresh condition, free from salt or any other ingredient likely to interfere with the flavour or condition of the material so preserved. Mr. Mackay stated that the discovery was due to Dr. Redwood. In the course of last summer Dr. Redwood com-

menced a series of experiments with paraffin. The following peculiarities of this substance were referred to, viz., its solidity, whiteness, tastelessness, and entire freedom from smell. At 130° it becomes fluid, and may be raised several hundred degrees above 212° without altering its condition. It was found that animal substances, when immersed in a bath of paraffin heated to about 300°, rapidly lost their air and water, leaving the juice of the meat to be absorbed by the joint under operation. According to the thickness of the mass of meat, the time of its immersion is increased or diminished. By this process the germs of destruction are found to be quite destroyed, very much on the same principle that the various articles of food are prepared in hermetically sealed vessels, or the calf-foot jelly bottled and kept in a perfect state of preservation When the meat has thus been allowed to remain a sufficient length of time in the highly-heated paraffin, it is removed and immediately dipped into a bath containing the same material, at a lower temperature; and after two or three drippings the process is complete, and the substances thus preserved are ready either for home or foreign consumption. Already various samples have been prepared, and after three months' keeping, have been cooked and found perfectly sweet, and free from any taint whatever.—*British Medical Journal*, June 9, 1866.

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Value of Sewage.—The Reclamation Company, now actively engaged on the north side of the Thames, has already tested the value of the metropolitan sewage, and contemplates its regular and systematic utilization on a farm which the company is about to purchase.

We give the following details as the result of its first labours, which, whether viewed in a sanitary or commercial light, we take to be of the highest importance. Early in April last a plot of waste land at Barking Creek, devoid of surface soil, was covered with common sand brought from Mappling, near Shoeburyness, to the extent of two feet thick, on which was sown grass seed. The surface was then well irrigated with ordinary London sewage from the northern outfall. This has been repeated once or twice. The effects of this *manufacture of green meat*—for such, indeed, it may be most justly considered—has been the production of *three crops:* one cut in June and July, at the rate of sixteen tons per acre; a second, of eight tons; and a third now growing, and almost ready for the scythe! This illustration of the value of what we have for generations cast into our rivers as waste almost surpasses belief, and, at any rate, ought to engage the serious attention, as it is now doing, of all practical economists.—*Lancet*, September 8, 1866.

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Reproduction of the Aphides.—One of the most singular phenomena in comparative physiology is the method of reproduction of these curious but common insects. Successive generations are produced without any sexual copulation, or, indeed, without any generative system. Such, at least, has been the theory universally accepted till within the last month or so. In Professor Huxley's fine memoir the author attempted to prove that the reproduction of the aphides is simply a process of budding, like that of the hydra, and to which M. Quatrefages gives the name of "geneagenesis." Professor Owen, who thought the male sexual influence was transmitted from one generation to another and higher, called the process "parthenogenesis," or virginal production. But now it appears, from the recent investigations of M. Balbiana, that the so-called virginal or asexual aphides are true hemaphrodites; and thus the mystery is solved. The conclusion is a very startling one; but since M. Balbiani is a naturalist well known for his elaborate researches amongst the lower animals, his explanation must be accepted until either Professor Huxley or Professor Owen comes forward and refutes it.—*Lancet*, July 21, 1866.

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Low Forms of Life: Vibriones, Bacterium, and Leptothrix.—In the *Archiv für Mikroskopische Anatomie*, April, 1866, is a valuable essay on Leptothrix-swarms and their relation to Vibriones, by Ernest Hallier. The author traces the relation of some of the vibrio forms to Leptothrix and the more developed forms of mould, and he arranges them under the following heads: 1. Mould series, including *Penicillium*, or brush mould; *Mucor*, or head mould; and *Oidium*, or jointed plants. The first occurs on the surface of liquids, the second on substances which are pretty dry, and the third on substances which are putrescent

and pap-like in consistence. 2. Achorion series, which arises from the germination of the spores of brush mould, *Penicillium*, and gives rise to *Oidium*. 3. Leptothrix series, producing the *Leptothrix buccalis*. 4. Leptothrix-yeast, made up of the broken fragments of mycelium that have fallen into the fluid from the surface and from swarms, giving rise to (*a*) Penicillium-yeast, which is roundish, refracts slightly, and has a large nucleus; (*b*) Mucor-yeast, which is globular, highly refracting, and finely grained. 5. Torula-yeast, which is produced from the germination of Penicillium spores in alcoholic fermentation. 6. Jointed-yeasts, which take origin in acid and ammoniacal fermentations from the conidia of Penicillium or Mucor. 7. Acrospore-yeasts, or *Trichophyton tonsurans*, developing itself from Penicillium spores in connection with the development of oily matter (oil fermentation). Hallier thus confirms the opinion of some writers that the fungi found upon and in the human system belong to one genus. Many of the so-called vibrios and bacteridia are consequently the early stages of ordinary moulds developing out different mature forms, according to the soil which they fall upon.—*Med. Times and Gazette*, July 7, 1866.

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The Jaw from the Trou de la Naulette.—A new puzzle has been found for the ethnologists and anthropologists in the shape of a lower jaw from one of the Belgian bone-caves. We have been favoured with a sight of a cast of this bone of contention, and we will endeavour to describe it for the benefit of our readers. In the first place it is only a fragment of a jaw, but it presents all the essential parts for specific diagnosis. It consists of about three parts of the body of the bone and a small portion of the left ascending ramus. The teeth are wanting, but the alveoli are all in remarkably good condition. From the full development of the sockets and the size of the bone, it is evident that it belonged to an adult. The bone is of considerable thickness, the symphysial portion being much thicker than in ordinary European specimens. The points of agreement with human structure are the following: The alveoli describe a parabolic curve; the molars are of large size compared with the premolars; there is no diastema between the canine and the contiguous teeth; the lower border of the bone presents the usual human characteristic in its perfect curve. The following are the differences between this bone and that of an ordinary European: In the first place there is a total absence of chin. The anterior symphysial surface is slightly sloped backwards. The posterior symphysial surface projects further and more abruptly backwards than in the European or in any other human jaw we have seen. There is an absence of the tubercles for the insertion of genio-hyoglossi. The alveolus for the canine shows that that tooth must have been of larger size than in the typical human subject. Of the three true molar teeth, the third or posterior molar was decidedly the largest, and had an implantation by three fangs. The first and second molars were of ordinary size, and were implanted by two fangs. In several of these respects the jaw may be matched amongst Australian specimens, but it presents wide differences from the jaws of Western Europe of the present period. In the following points it exhibits decided pithecoid analogies—the large size of the third molar and canine teeth; the abrupt projection backwards of the posterior symphysial surface; the great thickness of the anterior portion of the bone, and the entire absence of mental eminence. The bone was found by Dr. Edward Dupont in the cavern of La Naulette, on the banks of the Lesse River, in a perfectly stratified deposit of sandy clay, under two layers of stalagmite, at a depth of three and a-half metres (about 11 feet 4 inches) below the surface. In close contiguity with this jaw, and under similar conditions, were found an upper incisor and canine, presumably human, an ulna, certainly human, a piece of reindeer bone presenting a circular perforation made by some sharp instrument, and numerous remains of Elephas primigenius, Rhinoceros tichorhinus, and Hyæna spelæa. The strata were perfectly undisturbed. We will not speculate upon the history of this remarkable specimen. Human we believe it to be, but of a type of humanity far inferior to any white race now existing. Were the supposition tenable that it is the bone of an ape, we should feel inclined to attribute to it the dignity of "the missing link." We hear that the Curator of the Anthropological Society is preparing a memoir on the subject.—*Med. Times and Gazette*, Aug. 18th, 1866.

The Dinornis.—The *Sidney Mail* states that remains of this extinct bird have been found in good preservation at some gold diggings near Nelson. The skull, which is very perfect, measured two feet in circumference. The bones of this gigantic bird had some gelatinous portions still attached to them, so that they could not have been very long inhumed.

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Desecration of London Graveyards.—The following statement, which we extract from an editorial in the *Medical Times and Gazette*, June 30, 1866, should be a lesson to us in this country as to the horrors resulting from allowing the dead to be interred within the limits of large cities. We have repeatedly pointed out the dangers to the living from disease engendered by this cause, and and an additional argument may be drawn from the following recital of its demoralizing tendencies, which must shock the sensibility of every one having any regard for the loved ones they have lost, or who even possess an ordinary sense of decency:—

"Our population want lessons in decency, in gentleness, and reverence. We want them to respect humanity in all forms, even the lowest; and we believe that people who are brutal to the dead will be so to the living likewise. If we wanted to make a labouring man a drunkard, a wife beater, one who would not honour his aged parents, nor take care of his helpless children, we should set him to work upon digging up a closely packed graveyard and "fortify him with liquors" to enable him to go through the degrading and noisome task. The Rev. Mr. Arrowsmith, writing to the *Times* on the digging up of the St. Giles's Cemetery, says:—

"'When, late in the evening of the 13th inst., I advised you on this subject, about a dozen, or perhaps a score, of bodies had been exhumed; it was the uppermost tier of a huge pile of dead. By ten o'clock next morning I should suppose that the remains of at least fifty corpses had been tossed together. The miners had struck upon a rich vein of dead men. Shells of coffins packed like hat boxes, with a thin layer of earth between, cropped out all round; cavities where heads had lain were coated and fringed with bushy hair, and a treacly ooze was sobbing from the rifts in the broken coffins. Even the strong stomached, case-hardened navvy was softened and sickened. It became evident that, on sanitary grounds alone, no time should be lost, for although fortified with liquors, the men could not be expected to sustain the nauseous stench without imminent risk to health, and the whole neighbourhood might be involved, as the surrounding air to a considerable distance was rapidly becoming tainted. My curate at once went in quest of the officers of health, Drs. Hillier and Buchanan, who, upon examination of the spot, in their turn hastened to find the solicitor of the rector of St. Giles. That gentleman, not without some pressure, consented to accompany them to seek an interview with the Midland Company's solicitor, who was hardly prevailed upon to issue an order for the stoppage of the disinterment.'

"We ought to do honour to Mr. Arrowsmith for his efforts to check this desecration, which is, to tell the truth, no credit to the Church of England. Whether we think of the solemn act of Episcopal consecration by which ground is set apart for ever for the repose of the mortal remains of the faithful, or at the enormous incomes derived from burial fees in times past, or at the confessed abuses and covetousness which were the shame of all burial grounds within living memory, we should have expected the Bishop of London and the clergy of St. Pancras to have been foremost in opposing such a traffic in men's bones.

"It is well known that every burial-ground of our old London churches has been filled over and over again, and that it would be difficult to find a yard or a foot of soil in any of them, to a considerable depth below the surface, which is not made up of human remains. From century to century, from year to year, the number of the dead had increased with the increasing population, and yet our churchyards were still compelled to make room for more, until the Legislature some few years ago interfered and closed them.

"To the almost compulsory desecration of removing remains to make room for other burials, succeeded another phase of desecration—the conversion of the abodes of death to other uses. This is the special subject of our present inquiry. We must premise, however, that such conversion of the metropolitan graveyards has been going on for centuries, though scarcely in so indecent a form, and many a block of build-

ings, many a thoroughfare and street, now stand or pass over the graves of the mouldering dead.

"The burial grounds of St. Giles's and Old St. Pancras are now the scene of wholesale desecration. The Midland Railway Extension was empowered by Act of Parliament to make way as it liked, and, of course, the question was to do so as cheaply as possible. Two courses were open—either to avoid the churchyards and go through the property of the living, at the usual great cost of compensation, or to go through the property of the dead at a comparatively much smaller figure.

"For the round sum of £20,000 the Vestry of the parish conceded the right of desecration, and the works are now in operation—with rather alarming prospects, however, for the Company.

"A few days ago the navvies turned up some four or five hundred remains at the corner of St. Giles's burial ground; and on Thursday last delved into another vein of decaying mortality, in what was formerly a part of Old St. Pancras Churchyard. Visiting the scene of desecration, we noticed that one of the skulls turned up exhibited not only remarkable proportions, as though indicative of some extraordinary physical and mental peculiarity, but showed on the left side of the forehead what appeared to be the clean perforation of a bullet, evidently fired from above. The frontal bone was of extraordinary thickness, and those of the other parts of the body corresponded to the large development of the skull.

"The part of the ground where these human remains were found had been closed to burials ever since 1792, when the Vestry of the day felt compelled to purchase a portion of an adjoining field to extend their burial ground.

"Now, within five years after making this purchase of fresh ground, it was deemed expedient to build a house for the sexton. The question then arose, where was it to be built? On the new ground or on the closed churchyard with its thousand thousand graves? Cupidity decided that it should be built over the graves, and this was accordingly done, as made evident by the recent exhumation. From being the sexton's house, the premises passed into other occupation, and finally formed part of Bessemer's manufactory, through which the Midland Extension is proceeding.

"The formidable nature of the dilemma into which the railway company has fallen appears when we state that the design is not only to construct a railway over these burial grounds—and already the great beams are fixed over many a venerable tomb—but to *tunnel* them at the depth of ten feet below the surface! Imagine the tunnelling of a burial ground! Surely it must have been known that many a family grave is sunk from eighteen to twenty feet below the surface, and that at the depth of ten feet is precisely the average level where they will have to bore through a festering mass of decomposing humanity!

"We need not state that considerable excitement exists on all sides, and that the relatives of the dead reposing in these ancient burial places are making anxious inquiries respecting the fate of the cherished remains, hitherto respected."

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Edinburgh Medical Journal.—Dr. Rutherford Haldane has resigned the editorship of this journal, and is succeeded by Dr. Saunders.

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Bone setter convicted of Manslaughter.—At the late Norfolk assizes a man named Bennett, who, it appears, enjoys a considerable local reputation as a bone-setter, was convicted of the manslaughter of an unfortunate man who had consulted him for an injury to the shoulder. Bennett, following the almost invariable rule of his fraternity, pronounced the bone out of place, and proceeded to employ several men to pull at the arm, with a view to reduction. Reduction being impossible, from the simple reason that the bone was not dislocated, the assistants' efforts were redoubled by the prisoner's direction, and resulted in laceration of the pectoral muscles and rupture of the axillary vessels and nerves, and the patient's death the same night. Even a country jury could hardly be persuaded that this result evinced that competent knowledge of surgical matters which has served so often to save offending quacks from the grasp of the law, and the bone-setter was condemned to pay a fine of £50 or to go to prison for six months. We are glad to note that the presiding judge remarked upon the "extreme moderation" which characterized the evidence of the professional witnesses.—*Lancet*, July 28, 1866.

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CLINICS.

CLINICAL LECTURE.

Clinical Lecture on Addison's Disease. By EDWARD HEADLAM GREENHOW, M. D., F. R. C. P., Assistant Physician to the Middlesex Hospital. (Continued from p. 177.)

As the case upon which I have dwelt in the former part of this lecture is still under observation, and I can therefore only speak of it as Addison's disease on the assumption (of the truth of which, however, I entertain no doubt) that the diagnosis is correct, I must now, in order to place the subject fully before you, give you the details of Dr. Thompson's fatal case, which he has kindly placed at my disposal, and of which Dr. Cayley has made a thorough *post-mortem* examination.

M. D., aged 55, labourer, was admitted into Hertford Ward, under Dr. Thompson's care, on the 6th of last month. He had been strong and hearty until about three months before his admission. His illness began without any definite symptoms beyond gradual loss of strength, to such an extent that he could scarcely stand, and was compelled to give up work, and about Christmas to leave off going out, even for a short walk in front of his house. Besides the great debility, he by this time suffered also from breathlessness on exertion, nausea, frequent vomiting, and pain at the epigastrium.

On admission, his complexion was dark, but less so than that of the patient whose case I have already described. His body generally had only a faint brownish tinge; but the penis and scrotum were of a very dark blackish brown hue, as were likewise the cicatrices of some burns received in early life upon the left arm and upon the inner aspect of the right elbow. I should mention, however, that the discoloration was limited to the less deeply injured parts,

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and that, in the midst of the dark patch on the inside of the right elbow, was a small, well-defined, glistening, perfectly white cicatrix, about the size of a pea, where the burn had destroyed the deeper layers of the skin. On the back, also, were several cicatrices, some of which were discoloured, while the deeper ones remained of normal hue. The cicatrices of bubões in each groin were stained of a deep brown colour. On the upper surface of the tongue, near its edge on both sides, were several brownish-purple stains, with well defined margins, perfectly smooth, and neither elevated above the surrounding parts nor differing from them in hardness. The lips and buccal mucous membrane also presented distinct brown stains.

As regards constitutional symptoms, the pulse was almost steadily 60, very feeble and compressible, and, for the first week, the heart sounds were free from roughness. The respiration was feeble; and slight rhonchus and sibilus, with a few moist sounds, were heard on both sides of the chest. The percussion-resonance was slightly deficient in the upper part of the chest, particularly below the right clavicle; but there was nothing to indicate active disease in the lungs.

Whilst in the hospital, the patient suffered much from retching and sickness: and complained of pain in the loins and epigastrium, frequently accompanied by tenderness on pressure over the latter region. He had frequent cramps in the muscles of the abdomen and legs, especially when he retched; and found it easier to lie with the knees drawn up, the cramps becoming worse when his legs were stretched out. A few days after his admission, the matter vomited became of a greenish colour and had a bitter taste. On February 14th, for the first time, a faint systolic murmur was heard at the apex of the heart, and the pulse fell to 52, and became extraordinarily weak; but a day or two afterwards rose again to 60. On the 19th, he was so weak that he fell when he attempted to get out of bed; and on that day the matter vomited consisted of mucus streaked with blood. He now slept badly; and by the 22d had entirely lost his appetite. The retching continued; and there was a distinct cadaverous odour about his person. On being raised up in bed for examination of the chest, he became very faint and sick. On this day, fine crepitation was found below the left clavicle, and rhonchus and sibilus were heard all over the posterior part of the thorax. There was also marked dulness over the upper part of the chest posteriorily. He had raised a few thick dark green sputa, several of them tinged with blood; and he complained of sharp pain in the region of the diaphragm near the margin of the right ribs when he breathed hard. From this time he gradually sank, and expired on the 2d instant; death being preceded by great restlessness, retention of urine, wandering of mind, and groaning as if from pain.

At the *post-mortem* examination the lungs were found firmly attached to the ribs by fibrous adhesions. Deposits of yellow cheesy matter were found in the apices of both lungs; and these deposits were surrounded by dark consolidated tissue intersected by fibrous bands. The lungs were everywhere else perfectly crepitant. There was recent pericarditis; and the right cavities of the heart were filled with firm masses of yellow semi-transparent fibrin adherent to the musculi pectinati and chordæ tendineæ, and passing into the pulmonary artery as far as the second division. A similar but smaller coagulum was found also in the left ventricle, passing for a short distance into the aorta. The great omentum was firmly adherent to the diaphragm and the gall-bladder to the small intestine. The under surface of the diaphragm, the surface of the mesentery, and of the peritoneum in front of the spine, were studded with patches of gray tubercular granules surrounded by deposits of black pigment. Peyer's glands were normal; the kidneys were slightly granular.

Both suprarenal capsules were enlarged and nodulated, the right being much the larger. The fibrous envelopes were much thickened; and that of the right capsule firmly adherent to the diaphragm. On section, no traces of cortex or medulla were discoverable; but the whole of both organs had been converted into material which to the naked eye had precisely the appearance of tubercle.

Under the microscope, a section of one of the discoloured patches from the tongue showed deposits of brown pigment arranged in irregular masses in the papillæ; the superficial layers of epithelium covering them being quite free from discoloration. I may here observe that the deposit of pig-

ment in the skin giving rise to the discoloration of Addison's disease is situated, as a rule, entirely in the rete mucosum, the epidermis and the true skin remaining generally unchanged.

You will have observed that this case presents the same general features as the former one; namely, gradually progressive asthenia and gastric irritability, attended by discoloration of the skin and of the mucous membrane of the mouth. In both cases, also, old tubercular deposits in a quiescent state were found in the lungs. This is quite in accordance with general experience; for tubercle in the lungs or other organs has been found associated with Addison's disease in a majority of all the genuine cases published. To the black discoloration round the patches of tubercle on the peritoneum in the last case, I attach no importance beyond that of their affording proof of the very chronic character of the tubercle in these situations; for the same appearances have often been observed in chronic tubercular affections of the peritoneum, in cases in which the suprarenal capsules have been found quite healthy. Indeed, several foreign writers are of opinion that the discoloration found in Addison's disease is due, not to the peculiar morbid change in the capsules, but to the general tubercular disease which is frequently associated with it. It is quite true that, in very chronic phthisis, there is occasionally a dusky hue of skin; and I have lately pointed out to many of you two such cases under my care; but this discoloration in phthisis is comparatively rare, and, when it does exist, is wanting in all the characteristic features of the discoloration peculiar to Addison's disease. Moreover, it is just those cases of Addison's disease which are complicated with advanced phthisis in which the discoloration of skin is most frequently absent; whereas, if the theory to which I have referred were correct, those are precisely the cases in which we ought to find it the most invariable and most strongly marked. The adhesion of the right capsule to the diaphragm and the thickening of the connective tissue round both capsules in Dr. Thompson's case afford conclusive evidence of there having been inflammation in those parts, although the *post-mortem* examination has revealed no obvious cause for it, such as the caries of the spine, which I feel assured will be found in the case of C. S., the patient now in Founder Ward. Doubtless some of the symptoms presented by Dr. Thompson's patient were due to the other diseases under which he was also labouring; but this in no way invalidates the correctness of the diagnosis as regards Addison's disease, which was made on the day of the patient's admission, and was proved to be correct a month afterwards by *post-mortem* examination. A few days before death an unpleasant cadaverous odour was observed about this patient's person. This peculiar symptom has been noticed before in Addison's disease, both by myself and by other observers. In my experience, it is a sign of the approach of death, which has invariably taken place in the course of a few days after its appearance.

The discoloration is quite characteristic in both the cases I have related; though it is most intense in Dr. Stewart's case, which you can still see for yourselves. Sometimes, however, the discoloration of skin is faint, and insufficient to suggest the nature of the disease from which the patient is suffering. It has happened to me on two occasions to be led to diagnose Addison's disease by the constitutional symptoms alone, aided by the circumstance that there was no other discernible disease to account for them; and I have then had to look closely for the slight discoloration of skin in order to confirm my diagnosis. This occurred, in fact, with regard to the case which I mentioned, at the beginning of this lecture, as having been recently in the hospital under my own care; and, as it seems to show the at least temporary efficacy of treatment in this disease, I shall devote a few minutes to giving you some particulars of it.

J. D., aged 43, park-keeper, became an out-patient under my care on the 17th of last November. He had had ague some years before coming under observation; but had been otherwise healthy until about five months since. He had suffered much during that period from pain in the loins, especially on the right side, and from pain and tightness in the epigastrium, for the relief of which he had applied a small blister to the part three months before his admission. He had also suffered from vertigo, and latterly from nausea, retching, and vomiting.

On admission, he had a languid, exhausted aspect; his pulse was extremely

feeble; he was short of breath, and manifestly very ill; but there was no emaciation, nor any obvious evidence of local or constitutional disease. He had a troublesome catarrhal cough, but without any physical signs of pulmonary disease; his tongue was clean; bowels confined; and urine normal.

From the absence of any other cause for his peculiar symptoms, I was at once led to suspect the existence of Addison's disease, and to seek for discoloration of skin in corroboration of my suspicion. I then observed that the face and back of the neck were slightly dusky, as were also the hands and arms as high as the elbows. The part on the epigastrium where the blister had been applied three months before was deeply discoloured; and on the left clavicle there was a yellow-brown stain, about an inch in length, evidently corresponding to the cicatrix of some slight wound. These last features of the discoloration decided me in the opinion that the case was one of Addison's disease. With these exceptions, however, the skin was still fair, and free from pigmentary deposits. The buccal mucous membrane presented several brown stains in places which had apparently been irritated by the teeth; but the margins of the lips were unaffected.

J. D. continued an out-patient until December 29th, when he was admitted into Hertford Ward. His cough had abated, and he had lost the sickness for some time; but on the 20th of December he had been attacked with severe pain in the epigastrium, together with loss of appetite, nausea, and breathlessness. These all continued at the time of his admission. His hands were cold; his pulse thready and compressible; respiration hurried; and he had a constant inclination to yawn and stretch. His face, hands, and nipples were manifestly darker; and several dark specks, of the size of freckles, had appeared since he was first examined, but all on the previously discoloured parts of the skin. While in the hospital, he had slight cough, raising a thick, dark, scanty mucus. His pulse remained feeble; and he still had pain in the left hypochondrium, but was better in both respects while in the recumbent posture. He left rather suddenly in consequence of the shock occasioned by the deaths of the patients in beds on either side of him on two successive days; but he has continued under treatment up to the present time. He is now decidedly stronger, and has been able to resume his occupation; but he still presents, though in a mitigated degree, the same constitutional symptoms and the discoloration of skin is becoming gradually more general and its characteristic features more strongly marked.

These circumstances leave no doubt whatever on my mind as to the existence of Addison's disease of the suprarenal capsules; and, although the patient may, with great care and suitable treatment, be propped up for an indefinite time, he must always be considered as in imminent danger of a breaking down under any powerful depressing influence. Even an unusually severe day's work, or a slight attack of diarrhœa, might suffice to upset the balance and lead to a speedily fatal issue of the case. Nevertheless, he has unquestionably benefited much from the means used; for when he came into the hospital he was becoming so rapidly worse, that it seemed probable he would die in a few days; and he not only improved much before he went out, but continued to do so afterwards at home, and has not yet relapsed.

The other case which I mentioned as having been in the hospital under Dr. Thompson's care, and which has remained under my observation ever since, has followed so very similar a course, that I shall read you a brief history of it, before proceeding to point out the mode of management which I have hitherto found most successful in delaying the progress of the malady.

E. B., aged 26, needlewoman, was admitted into Northumberland Ward in March 1865. Dr. Thompson asked me to examine her on the day of admission. Ten years before, she had hurt her hip, and had been cupped; but she had been in generally good health, and had worked hard until November, 1864. She then began to fall asleep over her work, to have frequent attacks of vomiting, and to suffer from gastralgia, and from breathlessness and palpitation on exertion. About Christmas, her friends noticed that her complexion was becoming darker. On admission, her pulse was exceedingly small; and she complained much of lassitude and of vertigo when she moved about, or even raised herself suddenly in bed. She had no appetite, but constant thirst and craving for cold water.

Her respiration was quick and shallow, with a tendency to yawning. There was slight dulness on percussion immediately below the right clavicle, and considerable tenderness on pressure in the right hypochondrium. Her face was generally dusky, with ill-defined patches of a darker brown on the forehead and cheeks; the conjunctivæ, as usual in this disease, remaining white. The chest was dusky; the nipples and areola intensely brown; and the mammæ atrophied—a circumstance I have observed in other females suffering from this disease. The cicatrices of the cupping-marks on the hip, and of a burn on the right elbow, were stained brown; and there was a dark line nearly round the abdomen, corresponding to the line of pressure of a string belonging to her dress. Here you will recognize the same train of symptoms and the same characteristic features of discoloration of skin which I have described in the other cases. This patient improved very much in the hospital, and left it at the end of some weeks, for the Convalescent Institution at Walton-on-Thames. On her return home, she discontinued the treatment, and resumed her work, but fell off again in a month or two; and, on being sent to in haste, I found her one night lying exhausted, cold, almost pulseless, sighing and yawning, retching at every movement, and complaining of intense pain in the hypochondrium. In fact, she seemed almost dying; and I brought her at once to the hospital, where, however, she again rallied, and was again discharged at the end of a few weeks, in a greatly improved condition. Soon after leaving the hospital she married, and continued tolerably well for some months, but is now once more under my care as an out-patient, suffering, though in a less intense degree, from her former symptoms; and the discoloration of her skin has certainly become deeper during the interval. Her hair, originally of a dark brown colour, has also gradually changed to black, and has become very coarse.

It seems to be unquestionable, from the history especially of this last case, that Addison's disease, although incapable of cure, is yet in some degree amenable to treatment in respect of delaying its progress, unless the illness have already arrived at its later stages. Owing, no doubt, greatly to our still imperfect knowledge of the nature and causes of the disease, the means of treatment at our disposal are as yet unfortunately scanty. The remarkable asthenia, however, by which the disease is characterized, the constant tendency of the patients to succumb under any powerful depressing influence, and the strong evidence as to the disease being frequently a result of surrounding irritation, are facts which clearly indicate the necessity for tonic treatment and nutritive diet, the avoidance of all causes of depression, and the great value of rest and of such therapeutic agents as may relieve the vomiting and other exhausting symptoms and tend to invigorate the general health. Prolonged rest in bed, and subsequent avoidance of fatigue, or indeed of much bodily exertion or mental strain of any kind, have formed essential parts of the management in all the cases which have improved for a time under my observation. The use of drastic purgatives should also be scrupulously avoided in these cases. Constipation is more common than otherwise in Addison's disease; but, unless it be very extreme, I think it better to abstain from interference than to risk the dangerous depression which often follows the administration of aperient medicines. Many of you will recollect the case of E W.. a young girl who died under my care in Murray Ward of Addison's disease somewhat more than a year ago, and whose fatal seizure appeared to have been brought on by the effects of a dose of calomel and jalap given her by her mother.

As regards diet, the only plan is to give nourishing food of whatever kind the patient's stomach can best bear, and this will probably vary more or less in every case; substituting milk, eggs, jellies, oysters, and the like, for the stronger diet of meat or soups, when the stomach cannot tolerate these latter.

For the relief of the nausea and vomiting, ice, soda water and brandy, chloroform or creasote, bismuth and effervescing medicines, with citrate of iron, have each in turn proved useful in my hands; and, again, each at times has failed to effect any good purpose. After the sickness has abated, decided benefit sometimes attends the administration of chalybeates and cod-liver oil or glycerine. In the last two cases I have related to you, cod-liver oil disagreed with the patients; but glycerine, in doses of two drachms, combined with fifteen or twenty

minims each of spirit of chloroform and of the tincture of sesquichloride of iron of the *London Pharmacopœia*, has been of great service. I speak positively on this point, because in each case the patients on several occasions having discontinued the medicine as soon as they felt better for it, have then fallen off, and, on applying to me and resuming its use, have in a week or ten days begun to improve again without any other simultaneous change in their treatment or circumstances.

Little as this is, it is yet all that I can tell you from my own practical experience on the subject of treatment; and I shall now only detain you for one concluding remark. You may be surprised that I have chosen to base my lecture on four cases of Addison's disease, of which only one has passed the crucial test of a *post-mortem* examination; but I have done so purposely, because I have little doubt that in one at least of the other three cases we shall soon have the opportunity of verifying the diagnosis and of thereby proving the reality of the relation between the symptoms I have described and Addison's disease of the suprarenal capsules—a relation of which I am myself as firmly convinced as I am of the relation between the physical signs of a cavity in the lungs or of incompetency of the mitral valve and the diseases which they respectively indicate.—*British Medical Journal*, July 14, 1866.

HOSPITAL NOTES AND GLEANINGS.

Pyæmia in Dresden Hospitals.—Mr. A. Bruce, who spent a couple of weeks in the Dresden Military Hospitals, after the Battle of Königgrätz, gives (*Lancet*, Aug. 25, 1866) some interesting particulars of his observations there. Pyæmia, he says, was "the scourge of the hospital. Of all the post mortem examinations I had the opportunity of making, there were but few in which the patients were found to be non-pyæmic. The majority presented most typical and most terrible examples of metastatic abscesses in lungs or liver, more frequently in the former than in the latter; but when they did occur in the latter organ, they generally attained a far greater magnitude. In one case, the entire organ was completely riddled with abscesses. These sometimes appeared to follow the branches of the portal vein, presenting on section a remarkably arborescent appearance; the suppurating lobules had in such cases a dark spot in the centre. Abscesses appeared with almost equal frequency in the two lungs: most frequently in the posterior bases, and possibly more often in the right than the left lung. The position of these abscesses was marked on the surface by an indurated and elevated mass, surrounded by a ring of hemorrhagic effusion. In some cases it would seem as if suppuration had subsequently taken place outside this ring; thus there was an outer zone of grayish-green pus, then a zone apparently of dark altered blood, inclosing the ordinary metastatic abscess or slough. Decomposition advanced so rapidly in these cases that even when the post-mortem was made whilst the body was still warm, the blood in the liver and other organs was found to be aerated and loaded with gas-bubbles. An abscess was once found in one of the papillary muscles of the left ventricle of the heart. They were rarely found in the spleen, and not once in the kidneys." * * *

"Few things surprised me more than the small quantities of stimulants given by the German surgeons. Even in cases of profuse suppuration, low forms of erysipelas, pyæmia, &c., they give no brandy, and only moderate quantities of red wine (claret). This seemed to me to be a fatal error; and several cases would, I feel assured, have done better under a more actively stimulating treatment. Even with the enlightened views of the German school of pathology, there is still much of the old prejudice with respect to the nature of inflammation."

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Hysterical Tetanus.—Reported by Dr. Belcher. C. B., æt. 16, by occupation a milliner, a resident in Dublin, and unmarried, was admitted into St. Vincent hospital on the 22d of March, 1866, under the care of Dr. Mapother. Previous to admission she had worked for ten hours daily; her menstrual functions were in general regular, though obstructed at the above date; and she was perfectly healthy in other respects.

The immediate cause of her admission was the occurrence of a slight punctured wound, which was to be seen between the thumb and first finger of the right hand, and was occasioned by one point of a small pair of scissors. This happened on the 16th March. Within ten minutes after the occur-

rence of the accident, she began to experience a gradually extending sensation of stiffness in the biceps muscle of the right arm. On the night of the 19th March, the rigidity extended to the muscles of the neck.

On admission on the 22d of March she could scarcely walk up stairs to her bed; her body was bent to the right side; her left leg was also affected and her hip was sore. Her pulse was 120. She was directed to take one-eighth of a grain of extract of belladonna in a pill every four hours; also to have ice applied to the spine and the back of the neck for six hours, and to have a turpentine enema twice. In the evening her pulse had fallen to 68. The pills were continued up to the night of the 23d. She was also allowed beef-tea and four ounces of wine. On the 24th I saw her a second time. She was then better; was not taking any medicine, and her diet was mainly composed of tea, eggs, and beef-tea. She now has the globus hystericus in the throat, and feels great difficulty in swallowing, though not by any means so much as she felt at the time of her admission. The local treatment of the wound was simply poulticing.

March 28th. On the 26th and 27th she could scarcely swallow anything. She is now a little improved in this respect; but her throat is still much complained of. Pulse 92; tongue clean. She has pain in the arm, but not in the thumb. She also has pain in the abdomen which had suddenly become tympanitic. The wound is now healed. For this symptom turpentine enemata were ordered.

April 4th. This day I saw the patient sitting up by the fire. She still has the globus hystericus with difficulty of swallowing; but she has not had any medical treatment beyond the local application of a liniment composed of linimentum saponis with opium.—*Medical Press and Circular*, April 11, 1866.

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Aneurism of External Iliac Artery; Ligature of Vessel with Silver Wire; Death from Bronchitis.—The plan adopted in the two following cases was new to this country, although it has been employed, we believe, in one case in America. Two objects were aimed at in the substitution of silver for silk or hemp in the ligature; 1st, to encourage healing of the wound by the first intention, never altogether practicable where the end of a ligature passes through it; 2d, to lessen the risk of the occurrence of secondary hemorrhage. The first of these objects was not attained in either of these cases, since inflammation took place in the track of the wound. As regards the other point, however, the condition of the artery after death in the fatal case must be considered favorable. The coats were not cut through; circulation had been stopped by lessening the calibre of the vessel. Mr. T. Pick, pathological registrar, has obliged us with notes of the first case:—

George H——, aged fifty-one, painter, admitted into St. George's Hospital, under the care of Mr. Pollock, on the 11th of September, 1865. Six months ago he fancies he strained himself while opening some sheets of lead, for he felt pain in the groin at the time, and the following morning he noticed a pulsation in this situation. He has continued his work since "on and off," and a week ago he noticed a swelling at the seat of pain.

On admission there was a circumscribed, pyriform swelling in the right groin, about three inches long by two broad. It was situated under Poupart's ligament, and extended from about one inch above, to two inches below it, in the course of the femoral artery, from which it could not be moved. There was a very distinct and forcible pulsation, consisting of a dilatation from above downwards; there was no distinct bruit to be heard. Pressure on the external iliac above the tumour almost, but not entirely, stopped the pulsation. The tumour could be emptied by pressure, but speedily refilled. Pulsation was much stronger in the posterior tibial of the left side than the right. There was a slight aortic murmur with the systole of the heart.

Sept. 14.—The patient having been placed under the influence of chloroform, a semilunar incision was made just above Poupart's ligament, and, the various layers of the abdominal wall having been cut through, the artery was exposed. It was then encircled by a loop of silver wire, which was tied; this completely commanded the circulation in the tumour. The ligature was cut off short, and the wound brought together with silver sutures.

15*th.*—Last evening he complained of pain in the belly; it however soon passed off, and he slept pretty well. He now complained of rheumatic pains in both knees and ankles, otherwise he was comfortable.

Pulse was 120, full; skin warm; tongue white. The wound was perfectly quiet, and the leg, which had been swathed in cotton wool, was warm. About noon he began to complain much of cough, and his countenance began to assume an anxious expression. Mucous râles could be heard over both lungs.

16*th*.—His pulse was 136, thrilling; respirations 44 in a minute; mucous râles over both lungs. The wound looked quiet; no redness, but a little discharge. The tumour was consolidated. The foot felt extremely hot, and there was a discoloured vesication on the top of the great toe.

17*th*.—He lay in a semi-conscious state, with extreme dyspnœa. Respirations 54 in a minute; pulse 128, running; mouth dry; tongue dry, brown, and furred; skin hot; face flushed. There was considerable diffused cellular inflammation around the wound, and a hard, brawny place in right flank; skin over it of a dusky red. The spot on the toe was rather less discoloured. An incision was made into the inflamed cellular tissue, and one of the sutures was removed from the wound. He was ordered brandy. His breathing became more and more oppressed, and he died the same afternoon.

On examining the parts after death, there was found to be a tubular dilatation of the whole calibre of the external iliac artery just at the point where it becomes femoral. The aneurism was about the size of a peach, and on its lining wall was a very considerable deposit of laminated fibrin, whilst its centre was occupied by a clot. About an inch above the aneurism the vessel was tightly embraced by a silver ligature, which, however, had not in any way cut through and destroyed the coats of the artery. The vessel between the ligature and the aneurism, as well as above the ligature for some distance, was filled with decolorized clot, which was partially adherent to the lining membrane of the vessel. No other parts were examined.—*Lancet*, Sept. 22, 1866.

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Popliteal Aneurism; Ligature of Femoral Artery with Silver Wire; Recovery.—J. W——, aged forty-three. In 1862 while carrying a piece of timber, he fell with his leg under him, and strained his knee, for which he was laid up for fourteen weeks. About a fortnight before admission he noticed a kind of jumping pain in the popliteal space of the right leg, which was relieved on his sitting down, but was greatly augmented in walking or moving the leg at all. The heart-sounds are natural, and he has never suffered from any illness except the accident above mentioned.

On admission, there was a large, egg-shaped, pulsating tumour, about the size of an ordinary fist (larger from above downwards than from side to side), situated in the popliteal space of the right leg. On applying the stethoscope, a distinct aneurismal bruit could be heard. The pulsation of the post-tibial artery was weaker than in the left leg.

On Nov. 2d. Mr. Holmes first commenced flexion of the limb for two days; but on account of the severe pain it caused the patient, it was discontinued, without any marked improvement having taken place.

Nov 4.—Digital pressure was tried for fourteen hours; but this again caused such severe cramping pains, that it was discontinued. Some little deposit had, however, commenced in the sac, and the tumour was rather more circumscribed.

6*th* to 14*th*.—The tourniquet was applied for periods of three to six hours daily, with marked benefit, the tumour being much more circumscribed and consolidation evidently going on.

16*th*.—The tourniquet was discontinued on account of the parts of the thigh becoming so lax and the artery so movable that it was constantly becoming displaced.

Various forms of compression were tried in succession, but none were found applicable. The patient then learned to compress the artery himself, but it produced no visible effect. Then the aid of fellow-patients, assisted by the students, was called in to compress the artery for twenty minutes out of each half hour during twelve hours per diem. At first, this was thought to be producing coagulation rapidly; then the disease seemed stationary, but the bruit always continued as loud as ever. At length it became evident that the tumour was increasing in size along the popliteal space of the femur, and then it was determined to tie the vessel.

Accordingly, on Dec. 28th, Mr. Holmes cut down upon the femoral artery at the apex of Scarpa's triangle, and ligatured it with silver wire. The wound was sewn up with

three silver sutures, the leg wrapped in cotton wool, and a bandage of flannel bound round it.

29*th*.—Pulse 126, thready. Passed a bad night. Leg painful; wound healthy; no pulsation in tumour.

30*th*.—Pulse 116; tongue cleaner; foot quite warm, no pulsation in tumour, which is smaller; slight redness and tenderness at the upper and inner border of wound.

31*st*.—Pulse 96; wound red, but not so hard or tender; foot warm; tumour smaller and more consolidated.

Jan. 2.—Pulse 88; wound probed, and a large quantity of pus let out; linseed poultice to be applied.

4*th*.—Wound nearly healed; no more pus exuding; tumour consolidated.

12*th*.—The wound is quite healed. The patient to get up. There is a good deal of thickening about the ligature, owing very likely to an effusion of lymph.

22*d*.—The tumour is gradually decreasing in size, and he can walk with a stick. He is to go into the country for a month.

June 23.—He was seen by Mr. Wilson, who remarks:—"The thickening about the ligature has disappeared. There is a tumour, about the size of an egg, in the popliteal space, very hard. No articular arteries can be detected about the joint. He still keeps the leg wrapped up in a flannel bandage, as he says it always feels cold. He is able to walk a considerable distance without limping, and has been at work for the last three months, and is now doing very heavy work, —viz., pulling down a house."—*Ibid.*

CHOLERA.

Treatment of Cholera by Hypodermic Injections of Warm Water. By HERMANN BEIGEL, M. D.—M. S., a widow of 44 years, had, since the outbreak of the present epidemic, been very much engaged in nursing cholera patients. On the 26th of August she did not feel quite well; and about one o'clock A. M., on the 27th, she was severely attacked by cholera, vomited very much, was purged severely, and subjected to violent cramps. In that condition she was received on the 27th into the cholera ward of the London Hospital. She was a well made woman, strong and muscular. The eyes lay deep in the orbits, and had a very distinct dark circle. The skin, particularly of the face and hands, was cold, inelastic, and wrinkled; the nails blue. The patient was extremely thirsty, frequently vomiting and purging, and up to twelve A. M., at which hour I first saw her, scarcely a few minutes free from cramps, so that she was constantly screaming with pain. The epigastric region was particularly painful. The case was, in the opinion of the house-surgeon, as well as of the matron, one of the worst which had been admitted into the hospital during the epidemic.

Temperature on admission, 36 3° cent.; pulse 112, very small, scarcely perceptible; respiration 22 in a minute. At two o'clock P.M. the temperature was 35.6° cent., pulse 96, respiration 24; at six P.M. temperature 35.9° cent; and at eleven P. M. temperature 36 0° cent., pulse 104, respiration 22. On the following day, at six A. M., the temperature was 53.8° cent., pulse not perceptible, respiration 23; at eleven A. M. temperature 35.5° cent., pulse not perceptible, respiration 30; at four P. M. temperature 34.9° cent., pulse not perceptible, respiration 36.

After examining the patient, I proceeded to inject warm water hypodermically. This operation was performed much more easily than I had imagined. In the calves, thighs, arms, and epigastric region seven ounces of water were injected, and so rapidly absorbed that I did not even find it necessary to put a piece of plaster to the little wounds caused by the syringe. Immediately after the completion of the injection the cramps ceased entirely, and did not return till the death of the patient. According to the report of the matron the thirst was also diminished, and the patient remained longer without asking for drink than she had done before the injections; the pulse became likewise more perceptible, and was reduced from 112 to 96. At half-past five o'clock P. M. I again injected four ounces and a half of warm water, and, according to the report, the vomiting and purging were not so frequent; but, as shown above, the principal sign—namely, the temperature —not only showed no improvement, but a decrease.

On the 28th, the general appearance of the patient was worse; vomiting and purging became, towards the morning, again more frequent; and the skin was very cool, and void of elasticity. I injected five ounces of water, and the absorption still took place

rapidly. In the course of the day the expression of the eyes became staring, the collapse increased, and the patient sank at about six P. M.

This case, although it ended fatally, affords some points of very great interest.

1. It has not been known hitherto that such large quantities of fluid could safely be injected hypodermically.

2. It is of great importance to know that, even in collapse, and when the stomach steadily refuses to retain its contents or anything that has been introduced into it, the skin is capable of absorbing fluids and bringing them into the current of circulation. Of that fact use may be made in other diseases, and nutrition carried on artificially till the alimentary tract is brought into a better condition.

3. Experiments have been made to carry out the idea just mentioned by injecting broth and other fluids, as much as a pint at one spot. Such a method is physiologically not justifiable, and, therefore, will scarcely be crowned with success; on the contrary, it causes inflammation of the respective parts and gangrene of the skin, whilst injection of a considerable quantity of fluids at different spots, and of about twenty or thirty minims at a time, may be practised without causing any considerable pain, and with the certainty of the separate small quantities of fluid immediately being absorbed and carried into the circulation.

4. In the case described above the injection of seven ounces of water was effected in about an hour and a half; but, to perform that operation in a shorter time, I had an instrument manufactured by Messrs. Krohne & Sesemann, of Whitechapel Road, which I call an "injector," and by means of which several ounces and even a pint of fluid may be conveniently injected hypodermically, according to the principles I have stated, in a very short time.

5. Should I have further opportunity of continuing this kind of treatment, the solution which I would choose for injection would be one containing ½ per cent. of phosphate of soda and ½ per cent. of common salt, that being the chemical composition of the rice-water evacuations as analyzed by Kletzinsky.

6. Hypodermic injections, as I learn from several communications made to me after my short paper in the *Lancet* of 25th Aug., have been recommended also by different authors on the continent, and particularly by Dr. W. M. Gunning, of Amsterdam; and it really seems that this method, when properly applied, will at all events enable medical men to act more surely, and therefore more energetically, against the disease. —*Lancet*, Sept. 29, 1866.

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Nature of the Supposed Choleraic Poison. —Dr. Julius Althaus observes: "Some experiments which were lately made by Professor Horn, of Munich, seem to bring us a step in advance in our efforts to determine the nature of the choleraic poison. He connected the prime conductor of an electrical machine, the plate of which had a diameter of not less than three feet, with one end of a copper-wire, the other end of which was put into a tumblerful of water. The machine being put in action, this water was promptly ozonized. On the other hand, it was found that if one end of the wire was connected with the *cushions* instead of with the plate, so as to receive negative electricity, the water was impregnated with a cyanide. A person who frequently smelt at this water, and drank some of it, was seized with symptoms of severe cholerine, which were, however, quickly arrested by drinking some of the ozonized water. In presence of these experiments it seems to me very important that the drinking-water of our present cholera fields should be examined for cyanides, more especially as there is considerable analogy between the symptoms of cholera and those of poisoning by cyanides. Many facts which have been brought to light by previous experience might be satisfactorily explained by assuming the choleraic poison to be a cyanide. Thus we know that water which has been boiled does not propagate cholera, which might thus be accounted for by the circumstance that all cyanides, when heated in the presence of water, are destroyed. Again, the undoubted efficacy of sulphuric and other acids in arresting the premonitory symptoms of the disease might be explained by the power mineral acids possess of decomposing cyanides; and the failure of acids in the fully-developed disorder might be seen to depend upon the fact that acids, as such, only reach the alimentary canal, but not the blood. Lastly, we know that after storms, when the air is strongly ozonized, a decrease of cholera generally takes place; probably, again, owing to ozone decomposing the

cyanic poison. Might we not, therefore, in view of the failure of all methods of treatment hitherto adopted, employ ozonized water as an antidote in the treatment of cholera? And might we not use means of artificially ozonizing the air of our present cholera districts?"—*Lancet*, Oct. 6, 1866.

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Preparations for Cholera.—A French prefect wrote to one of the mayors of his department advising him, as the cholera had broken out in the district, to take all the necessary precautions. After some time the mayor wrote to say that he had taken all the proper steps, and upon the prefect sending to see that they were effectual, he found that the only preparation the mayor had made consisted in having a large number of graves dug in the churchyard.—*Lancet*, Sept. 29, 1866.

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Progress of Cholera. Great Britain.—"The cholera matter," says the Registrar-General in his last weekly return, "is now diffused very equally all over *London*, and as the waters of the upper Thames, of the Lea, and of the wells become infected, the utmost exertions of the authorities will be required to insure its decline." By whatever mode the disease has been disseminated, we cannot help feeling that possibly, if more energy had been exhibited at the outset by the authorities, and, above all, if the population had been more intelligent and less apathetic, we should not now be lamenting a stationary, instead of a declining, course of the pestilence.

Two things are clear—first, that at its birth the present outbreak was restricted almost exclusively to one locality; in fact, it was essentially a local epidemic, whose origin has been explicitly defined, and is now probably everywhere tacitly accepted as determined: and, secondly, that in the course of a few weeks the localized characteristics of the epidemic have disappeared, and it is now become general throughout the metropolis, although, happily, in a greatly modified degree of virulence. The following table, showing the distribution of the deaths during each week of the epidemic period down to the latest date, will best illustrate the nature and time of the transition in its character, and will be useful as an authentic record of the progress of the disease:—

Groups of Districts.	Weeks ending July 7.	July 14.	July 21.	July 28.	Aug. 4.	Aug. 11.	Aug. 18.	Aug. 25.	Sept. 1.	Sept. 8.	Sept. 15.	Sept. 22.	Sept. 29.	Total of 13 weeks.
CHOLERA.														
London	14	32	346	904	1053	781	455	265	198	157	182	150	177	4714
West districts	3	2	11	12	12	8	7	3	6	12	10	14	12	112
North districts	1	4	6	20	46	38	15	12	15	20	27	28	36	268
Central districts	1	3	1	15	32	23	16	13	9	12	20	19	28	192
East Districts	3	20	308	818	916	673	369	198	122	74	77	56	55	3689
South districts	6	3	20	39	47	39	48	39	46	39	48	33	46	453
DIARRHŒA.														
London	102	150	221	349	354	264	194	129	128	132	110	98	67	2298
West districts	16	18	37	48	46	31	28	15	12	18	14	11	9	303
North districts	23	37	54	78	79	51	40	21	24	19	11	19	11	467
Central districts	18	28	31	44	42	31	22	13	18	14	15	17	17	310
East districts	26	37	60	123	125	101	63	41	43	44	35	24	18	740
South districts	19	30	39	56	62	50	41	39	31	37	35	27	12	478

It will be observed that in the thirteen weeks from its first serious appearance in London cholera has carried off 4714 persons, and diarrhœa 2298. The sudden increase from 32 deaths by cholera in the week ending July 14 to 346 in the next week assured us that we were in for a strong fight with the old foe; another seven days saw

the deaths trebled, and in the week ending 4th August 1053 deaths were recorded, of which number 916 occurred in the eastern group of districts. This was the maximum point of the epidemic, and for the succeeding five weeks the deaths exhibited a satisfactory diminution; but there unfortunately we are met by an increase which has had the effect of throwing us back, so that we are now in about the same position as we were a month ago. And with regard to the distribution of these deaths, the facts are very striking, as showing the gradual diffusion of the disease from its original centre. In the week ending August 4 there were, as we have said, 1053 cholera deaths registered, and 916 of them happened in the east districts: this gives a percentage of 87 deaths in one specific locality.

Of the other cities and towns included in the Registrar-General's weekly return, *Liverpool*, as ranking only second in importance to London, merits a passing remark upon the diminished number of deaths from cholera in the last week, which were 116, as compared with 159, 182, 145, 225, and 146 in the preceding weeks. From one cause or another it seems as though a general mortality rate double that of London is to be looked for regularly in Liverpool as a matter of course; and, taking the last twelve weeks, the death rate from cholera and diarrhœa has been twice as great in proportion to its population as the death-rate in London from the same cause in the corresponding period.

In *Dublin* the cholera returns show a considerable increase; the deaths in the last five weeks have been 41, 52, 55, 65, and 98.

The epidemic, according to the *Lancet* (Sept. 29th), "is becoming more diffused in England. It has appeared at Wigan, and in the neighbouring districts; also at Prescot, in Lancashire; at Hartlepool, in Durham; at Thorne (and according to a local paper) Doncaster, in the West Riding, and Pocklington, in the East Riding of Yorkshire; at Exeter and Newton Abbot, in Devonshire; in the Bridgend and Cowbridge Union and Pontypridd, Glamorganshire; Bristol and Clifton, in Gloucestershire; Leighton Buzzard, in Bedfordshire; and at Blean, in Kent. Scattered cases are also reported from other districts. In no instance, as yet, have these outbreaks proved formidable, but they show a wide and increasing dissemination of the choleraic poison which arouses the gravest fears, not only for the present, but for the coming year. Applying to the course of the epidemic in this country the experience obtained from its diffusion over the continent of Europe, it is to be feared, as we pointed out last week, that the development of the disease in this country will not terminate with the present year."

The news from the *Continent* still tells of the extension of the epidemic. In Saxony cholera has not only broken out in Dresden, but it has appeared also in Leipzic, Bautzen, Zurichau, and Clauchau. The mortality is reported to be as yet small.

In *Christiania* the disease would seem to be slowly extending among the population. From August 16th to September 10th, 24 cases were registered, 19 of which proved fatal. All the earlier cases ended in death.

In *Belgium* and its capital the epidemic is still so prevalent that the popular festival in honour of the revolution of 1830, and the National Rifle Meeting (which a large body of English volunteers had proposed to attend) have been postponed.

From the *East* there is scattered information of the course of the epidemic of some interest. At the close of 1865 (as Mr. Radcliffe relates in his history of the progress of the epidemic in that year) Bagdad had been invaded, the disease having travelled to that city along the line of the Euphrates, having manifested itself successively at Sukesh-Shiookh, Sumaweli, Devaniah, Nejjeff, Kerbela, and Hilleh. Subsequently the malady extended to Samarrah, Kirkook, and Mosul through the intervening districts.

We now learn that early in the present year cholera was prevalent in Suleimania (seventy-three miles E. N. E. of Kirkook), and that it was raging in at least one locality near the Persian frontier. The disease also reappeared at Bagdad, scattered cases occurring from March to May. The latest news (two months old) makes known that the epidemic, extending on the one hand northwards from Suleimania, had advanced into Persia, attacked So-uj-Bolak, and spread through the district west of Lake Urumiyah to the town of that name; while, on the other hand, travelling eastwards and northwards from Mosul, it has appeared in Diarbekir.

Urumiyah has a population of 30,000, and the mortality rose in a few days from 5 or 6 deaths daily to 150.

Prussia.—In *Danzig*, during the week ending 20th September, 44 cases, 20 deaths. Six preceding weeks, cases, 338, 338, 388, 267, 307, 159; deaths, 166, 173, 182, 144, 184, 191.

Holland.—General return for the whole kingdom: Week ending September 1st, 1352 cases, 842 deaths. Preceding week, 791 cases, 535 deaths.

Returns for the principal towns:—

	Sept. 12th. Cases.	Deaths.	Since commencement of epidemic. Cases.	Deaths.
Amsterdam,	6	8	1054	966
'S Gravenhage,	11	8	1641	967
Delft,	0	1	669	416
Rotterdam,	5	5	1862	1173
Arnheim,	3	3	485	311
	Sept. 11th.			
Culenborg,	3	4	205	123
Zwolle,	1	1	311	186
Groningen,	4	3	1677	985

Russia. *St. Petersburg.*—General return from the commencement of the epidemic (June 14th) to Aug. 22th:—

	Males.	Females.	Total.
Attacks,	10,970	4,384	15,354
Recoveries,	8,231	3,277	11,508
Deaths,	2,151	930	3,081

Riga.—Aug. 29th, 129 cases, 70 deaths.

Mitau.—On Aug. 7th cholera broke out, and from that date to the 27th there were 35 cases.

Moscow.—From the commencement of the outbreak to the 8th of September, 536 cases, 250 deaths.

Kiev.—Aug. 24th, 14 cases, 6 deaths; 25th, 23 cases, 3 deaths; 26th, 20 cases, 11 deaths.

Berditchev.—Aug. 13th to 20th, 253 cases, 75 deaths.

Mohilev.—Aug. 10th to 17th, 230 cases, 80 deaths.

Odessa.—Aug. 20th, 59 cases, 28 deaths; 21st, 46 cases, 28 deaths; 22d, 39 cases, 22 deaths. The first case occurred on the 30th of June. The outbreak attained its highest development between the 24th and 31st of July, the maximum daily mortality being 123.

Warsaw.—Sept. 11th, 28 cases, 9 deaths.

France. *Nice.*—Mr. Consul A. la Croix, in a letter to *The Times*, makes the following statements relative to the outbreak here: From the 25th July (first appearance) to the 31st of July, 27 deaths in the town; 1 only from cholera. In August, 146 deaths; 20 from cholera. From Sept. 1st to 19th inclusive, 77 deaths; 17 from cholera. No death from cholera since Sept. 13th. Total deaths from epidemic within the periods named, 38 (in a population of 50 000). Total mortality from all causes, 250, as compared with 262 at the same period last year.

Boulogne.—The villages in the vicinity, as well as the town itself, have been affected by the epidemic. So far as can be ascertained the outbreak has never assumed serious proportions, the maximum daily mortality in the town not exceeding 12. The disease still retains a hold upon the low-lying localities.

Austria.—In *Vienna* 586 deaths were recorded for the week ending Sept. 22; of these 274 were from cholera. From the commencement of the outbreak to the 26th Sept. 1052 cases and 393 deaths were reported.

Italy.—At *Naples* the epidemic, according to the latest news, was assuming formidable proportions. On the 16th of September 345 cases were reported, and 236 deaths; on the 17th, 312 cases and 214 deaths. A violent explosion of the disease took place in the Basso Porto during the second week of September. Ninety-six cases occurred in this filthy street (which suffered more than any other locality of that city in the outbreak of 1865) in one day, and more than half ended fatally. The Chiaja, the west end of Naples, has been severely visited by the malady; on several days the deaths equalled the number of new cases. The disease prevails with greater severity in the hamlets and villages in the vicinity than in the city. In Torra del Greco one hundred houses are said to have been closed, from the families having been swept off. To the 20th ult. the only places in the neighbourhood which had escaped were Sorrento, Ischia, and Capri.

Venice.—Prior to the 19th of September, six cases of cholera and four deaths occurred. From the 19th to the 22d there were no cases.

Trieste.—To the 22d of September, 406 cases had been reported, and 220 deaths. At the date named, ten cases occurred in the city and environs.

Goritzia and *Udine* appear to have been sharply visited by the epidemic.

Ancona and *Barletta* are said to be "again threatened."

Genoa.—September 17th and 18th (noon to noon), 24 cases, 18 deaths; 18th and 19th, 39 cases, 12 deaths.

One of the Lipari Isles is said to be infected.

Palermo.—News from Valetta of the 25th ult, asserts that cholera had broken out in this city among the troops despatched there to subdue the insurrectionary movement.—*Lancet*, Oct. 6, 1866.

MEDICAL NEWS.

DOMESTIC INTELLIGENCE.

Cholera in Philadelphia.—It will be perceived from the bill of mortality in our last number and that in the present one, that the cholera which had gradually been subsiding, increased in the number of cases during the last week in September and during the first two weeks in October, but has again notably decreased in the number of its victims, giving hopes that it will soon entirely cease.

1866.	Mortality in Philadelphia from						
	Cholera Infantum.	Diarrhœa.	Dysentery.	Cholera Morbus.	Cholera.	Total Bowel Affections.	Total Mortality from all diseases.
Week ending Oct. 6,	15	3	6	17	103	144	367
" " " 13,	19	15	5	18	127	184	456
" " " 20,	20	15	7	11	67	110	362

Prize Question of the Connecticut Medical Society.—The subscribers, a Committee of the Connecticut Medical Society, offer the Jewett Prize of two hundred dollars for the best essay on the following question, namely: By what hygienic means may the health of armies be best preserved?

The offer is extended to all physicians and surgeons of the United States and the British Provinces of North America.

In awarding the prize the Committee will regard the literary merits as well as the scientific value of the papers submitted; and if none is received worthy of so liberal a prize, a decision will be deferred and the time extended.

Essays may be forwarded to either member of the Committee on or before the first of March, 1867, accompanied with a sealed envelope inclosing the name of the author.

The unsuccessful essays will remain with the member of the Committee in whose hands they were originally placed, subject to the order of their respective authors.

B. H. Catlin, M. D. *West Meriden*,
L. J. Sandford, M. D. *New Haven*,
Henry Brouson, M. D. *New Haven*,
Sep. 27, 1866. Prize Committee

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New Orleans School of Medicine.—The eleventh annual course of lectures in this Institution will begin on the 12th of the present month (November) and end on the 16th of March ensuing. The number of students during the previous session (1865–6) was 84, of whom 30 received the degree of M. D.

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Faculty of Medicine of the University of Victoria College at Montreal.—This is the present title of the "School of Medicine and Surgery of Montreal." Its pupils will hereafter receive university degrees. The course will commence on the 5th of the present month (November).

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How to make Autopsies Odious.—We are surprised to notice that a number of respectable physicians of Philadelphia, to whom the body of Probst was consigned after execution, appear to have lent themselves to the publication in the newspapers of the details of their experiments and dissections, which are related in such a manner as to horrify the public mind and foster the popular aversion to autopsic examinations. Had it been the leading purpose to punish the criminal after death, and add to the terrors of the law the terrors of another profession, the plan was well executed. The narrative, as paraded in the newspapers, is admirably calculated to place the hangman and the surgeon on the same platform, and to start the question in the minds of men whom the gallows alone might not deter from crime, whether they are willing,

in addition to the gallows, to be subjected to the ghastly horrors of galvanism and evisceration, by professional amateurs, in the presence of reporters and witnesses, whilst the flesh is still warm and palpitating. But what bearing has the transaction on the popularizing of autopsies and anatomical dissections in general? The interests of medical science demand the removal of the deep-seated prejudice which affects the public mind on this subject. It is a great question for our profession. Students cannot equip themselves for duty without the means of anatomical dissections. The knowledge of disease and therapeutics cannot advance without post-mortem examinations. But a foolish, though a very natural prejudice, presents a serious obstacle to our progress. And this prejudice is cherished and extended by the association of the hangman and doctor. These professional entertainments, in common parlance, *do not pay*. They cause us to be regarded as ghouls. They furnish some scientific amusement, it is true, but they block up the way to autopsies in every other direction than by the way of the gallows. It is our belief that physicians had better refuse all such unsavory jobs. If the corpse of a malefactor is to be punished or treated with indignity, let it be done outside of the profession. Let our association with the dead, in the public mind, be one of respect and decency, not of wanton mutilation and amusement. Let us claim the necessities of science and humanity as the only basis of necroscopic examinations, and as the proper limit of all such examinations.—*The Pacific Medical and Surg. Journ.*, Aug. 1866.

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Obituary Record.—Died, in Columbus, Ohio, Sept. 4th, 1866, John Dawson, M. D., for many years Prof. of Anatomy in Starling Med. College, Ohio.

—— near Nashville, Tenn , Sept. 19th, 1866, John M. Watson, M. D , Professor of Obstetrics in the University of Nashville.

FOREIGN INTELLIGENCE.

Death from the Inhalation of a mixture of Chloroform and Ether. — Dr. E. Ludlow records (*Med. Times and Gaz.*, Oct. 6, 1866) the following case in which death resulted from the inhalation of a mixture of one part chloroform to two parts of rectified ether. It is not stated whether by weight or measure.

"M. S., aged 40, was admitted into Bristol Royal Infirmary shortly before 11 A. M. on July 15, 1866. She had got a deep punctured wound on the outer side of the right forearm close to the bend of the elbow. Bleeding was profuse. It was plain that the radial artery was wounded. She had got the wound by accidentally dashing her hand and arm through a pane of glass. I was told that she lost a very large quantity of blood before she arrived at this Infirmary. Immediately upon her arrival a tourniquet was placed upon the brachial artery, and a compress and bandage was applied to the wound. This, for the time, stopped the hemorrhage. But it was obviously necessary that the radial artery should be exposed at the seat of injury, and that a ligature should be placed both above and also below the wound in that vessel. I listened to the heart, but I could hear no morbid sound. The pulse was not very rapid; it was of moderate volume, and easily compressible. I then safely administered one drachm of the mixture (of chloroform and ether) on a cup sponge. The first drachm being exhausted, I administered a second drachm. At length this also became exhausted, and I held out a sponge in order that a third drachm might be poured upon it. At this time the woman was insensible, but she was still struggling lazily, and her pulse was of the same character as at the commencement of the administration. During the short moment that I was waiting for the third drachm to be poured upon the sponge, I noticed that the pulse suddenly stopped beating. The respiration also ceased almost immediately; and after this the woman gave no indication of life. I made use of the galvanic battery; I gave enemata of brandy; and I kept up artificial respiration. I continued my endeavours for more than an hour without producing any other sign of life than one or two slight twitches of the abdominal muscles at the commencement of the application of the galvanic current. I desisted from any further attempts because respiration had been suspended for a very considerable time; not the slightest movement of the heart could be detected; and the corneæ had become glazed.

Post-mortem examination about seven hours after death.—Rigor mortis slight. Brain: Very anæmic but firm; each lateral

ventricle contained about two drachms of fluid; there was also a considerable quantity of fluid in the vertebral canal; no other abnormal appearance was observed within the skull. Lungs: In both there was extensive bronchitic inflammation, a considerable quantity of mucus adhering to the bronchial mucous membrane; a slight amount of emphysema in both lungs. Heart: Pericardium contained about a drachm of liquid; heart itself rather small, and the fat surrounding somewhat abundant; right auricle and ventricle quite flaccid, and containing a very small quantity of fluid blood; tricuspid and pulmonary valves quite normal; left auricle flaccid, and containing a small quantity of liquid blood; left ventricle contracted; mitral and aortic valves normal Under the microscope it was seen that in the muscular structure of the heart fatty degeneration was present to a considerable extent. Dr. Beddoe, of Clifton, as well as myself, inspected the muscular tissue under the microscope, and he agreed with me that fatty degeneration was present. Stomach: A large portion of mucous membrane on the greater curve was inflamed, corrugated, thickened, and covered with viscid mucus: the stomach contained about five ounces of partially digested food. Intestines apparently healthy. Liver slightly enlarged, fatty, and so very soft that very slight pressure sufficed to drive the finger through the hepatic structure. Spleen tolerably healthy. Kidneys soft; capsules on peeling carried with them minute portions of the cortical structure; cortical substance pale and apparently fatty. Bladder contained a very small amount of urine. Uterus somewhat large, but otherwise healthy. A recent clot was found in the right ovary. Throughout the examination a very small quantity of blood was poured out on division of large vessels, and not a single clot was seen. The right radial artery was found to be wounded close to its origin from the brachial artery. On the one hand there was no condition of disease sufficient to endanger life, and, on the other hand, no organ was thoroughly sound. I believe that death was caused by paralysis of a fatty heart which, on account of the hemorrhage, was insufficiently supplied with blood.

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Clinical Studies on the Injurious Effects of Chloroform on the best Constitutions and all Ages, and on the Necessity of substituting for it Rectified Ether.—This is the title of a paper recently presented to the French Academy of Sciences by Prof. PÉTREQUIN, ex-chief surgeon of the Hôtel-Dieu of Lyons, etc. etc.

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On the Superior Utility of Whole Meal Bread as a Daily Ingredient in Human Sustenance.—By HENRY MCCORMAC, M. D. The disuse of whole meal bread I esteem a positive drawback in our civilization. I do not think that there is an adequate consumption of the food that the grasses, the potherbs. and the beans or pulse, which GOD bestows on us, are so well calculated to yield. Our principal, and really very imperfect substitutes for the production of the vegetable world are wheaten bread and potatoes. Potatoes, to be sure, are a great stand-by, but they are not enough. And, then, in the spring months they deteriorate very rapidly, and no longer constitute a desirable exclusive, or even partial nourishment. Wheaten bread, then, is our great resort. It has come to be the principal representative of the vegetable world. Wheat is a great, nay, an admirable gift of Providence. But we vitiate that gift by our own improvident and injudicious management.[1] Loaves, to save room in the oven, are crammed close together in the act of baking. The consequence of this is that the oven is overheated in order to strike down through the mass of paste. An immensely thick and hard crust is formed at the top and bottom of the loaf, while the rest of it is most undesirably left without any crust whatever. Now, loaves should be crusted

[1] It is desirable for every reason and, especially for the sake of change, to encourage the confection of every variety of really good household bread, griddle bread, loaves baked in a brick oven or in the oven of the close kitchen-range. Potato cake, wheaten cake, rice cake, are all good. When rice or potatoes are used, they ought to be employed warm. A very nice sort of pancake is made from a batter of flour and milk, sweet or sour, and even of flour and water. The poor, and also some who are not poor, use soda in large quantities for raising bread. It is a great mistake, and is calculated to injure the tone of the stomach. Baking-powders are never desirable, and are sometimes quite pernicious. A much better resort is the bicarbonate of soda, baking soda, neutralized by the addition of muriatic acid, so as to convert it into table salt. The following procedure answers well: To every pound of flour or meal add 40 grains of baking soda, a pinch of salt, and a little sugar. Mix intimately. Then add 50 drops of muriatic acid in half a pint of water. Knead smartly and thoroughly. Divide into two rolls, and bake in a quick oven or on a hot plate with a cover.

all over. The bread would be much better baked, the top and bottom crusts would not be so hard, and the loaf would prove at once more wholesome and palatable. I will not enter here into the consideration of mouldy bread, and of bread with excess of water, and it is all too watery. Nor shall I speak of the various adulterations or perversions to which dishonest persons have had recourse for their own profit and to the public bane. I here wish merely, or at least principally, to dwell on the great evil of omitting the bran in the confection of bread. By leaving out the bran we injure the bread's efficiency, we lose a noteworthy portion of azote as well as a considerable amount of the phosphates, both of them of the utmost moment even when bread is but a partial ingredient in the general nutriment, but yet much more so when, as in the case of hard-working men and women, as well as children, it constitutes the principal sustenance.

The increase of the factory population, together with the ready facility which cooked food, in the shape of bread yields, has led to a vast increase in the use of bread. To a great, and, indeed, most undesirable extent, bread is consumed at the dinner meal, not as a portion, but, along with a little sugared hot water called tea, as in fact the entire nourishment. Owing to the absence of the bran habitual constipation, among those who mainly consume such bread, ensues. And, owing to the partial absence of nitrogen and of the sufficient phosphates, the body is not adequately supported. Habitual dyspepsia and debility, and in females amenorrhœa ensue, and the whole system, along with the bodily powers which ought to sustain that system, deteriorates. The evils which thus accrue from this wretched, ill-baked, watery bread, alike deficient in nitrogen and the phosphates, eaten, as it commonly is, three times daily, I really have no fitting terms to describe.—*Medical Press and Circular*, June 13, 1866.

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Charcool Pegs for Actual Cautery.—These are lighted and burn like a cigar, the end being somewhat pointed. They should be applied in a direct horizontal line, because pressure sideways would break the point. The composition is as follows: Powdered charcoal, 300 grains; nitrate of potash, 22 grains; gum tragacanth, 75 grains; water, 360 grains. Mix into a mass, and roll it into the shape of ordinary lead-pencil, about three inches long. Very few ashes are yielded, and when any form, they may be blown away, the current of air thus keeping up combustion.—*Lancet*, Oct. 6, 1866.

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Flannel Belts in the French Army.—The Secretary at War has just issued orders for such belts to be supplied to the whole of the French army. They are to be worn on the skin, and are expected to protect and keep warm the abdominal and lumbar regions.—*Lancet*, Oct. 6.

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The Status of the Medical Profession.—[There is unhappily too much truth in the following remarks which we take from an editorial in a late No. (Sept. 29) of the *Med. Times and Gazette.*]

"There is no class of men to whom the public are so much under obligation as to members of the Medical Profession, and it is not too much to affirm that there is no class of men to whom they are so ready to impute evil motives and corrupt practices. The fact is, we believe that the profession are so constantly bestowing benefits on the public, inaugurating charities, undertaking unpaid appointments, and scattering broadcast gratuitously what other men are paid for—their time, their knowledge, and their talents—that the world will not give them credit for having no ulterior motives in their acts. The public will not believe in so much disinterested benevolence, and are delighted to cast off the debt of gratitude they owe by throwing doubts on the source whence the good deeds they profit by spring. Accordingly, any imputation on a doctor's conduct or intention is eagerly welcomed and commented on by a section of the public press with a zest that proves the estimate the writers have formed of the predilections and opinions of their readers. To read the tirades which from time to time appear in some of the daily papers, it might be supposed that doctors were a set of crafty scheming adventurers, wielding deadly agents for evil with irresponsible power, deaf to the voice of conscience and the dictates of humanity, and bent only on obtaining their personal ends. The doings and sayings of no other profession are canvassed with so much prejudice. The enmity which used to be launched against priestcraft is now transferred to medicine. The enormous obligations which are due to the medical

profession are entirely forgotten, and a charge of moral delinquency against a medical practitioner, whether supported or unsupported by any evidence, is made an occasion for the most merciless personal attack, and too often for insinuating calumnies against the whole body to which he belongs."

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Germs in the Atmosphere. — In consequence of Prof. Frankland's recent letter to the Registrar-General, expressing a belief that the germs of disease might not be destroyed by boiling the water in which they were present, an animated controversy has been going on for the last week or two, and a letter in the *Times* has appeared under the well-known signature "S. G. O.," from which we extract the following important and interesting passages:—

"I know from experiment that there are 'germs,' containing a principle of life, that will stand very strange usage, and yet not have that principle destroyed. Many years since I applied a certain matter to a piece of glass about four inches square. This has another very thin piece of the same material cemented over it close on three sides, leaving a space just sufficient for a thin stratum of water between the two. It has been exposed for days to the action of the direct rays of the sun, it has been kept for months in the dark, sometimes has been for a year or two left without a particle of water touching its surface, in a very dry place. To amuse friends I have again and again allowed a little water, sometimes filtered, generally of the coldest *spring* nature, to fill up the spaces between the two glasses, —water I have previously tested for any living organisms. I have never failed, in a few hours, to produce a most beautiful exhibition of one of the most interesting species of infusoria, having beforehand sketched the exact creature I would produce. With the same water in another glass tank, of the same nature but not so prepared, I fail to produce anything at all until it has been left some days, and then the creatures seen are not my old friends. I have read, not seen, that these organisms retain their vitality even when the glass has been made red-hot. I don't say I believe it, but from what I have seen I think it quite possible. I therefore can believe that, granting water has certain 'germs' which can be detected in it before boiling, which germs, received into the human stomach, become a proximate cause of cramps, &c., some germs might exist with great vitality even after the boiling process. I say *some germs;* I do not believe *former germs* would be visible as such, but, as they are only the development of others far more minute, I can credit the fact that in this, the earliest state of vitality, be it animal or vegetable, the matter of such life may be indestructible even by boiling, unless some chemical agency had added to such boiling its own peculiar life-destroying element. But I think it right to urge another view of the subject. I will assume that water in which these germs are found has been *distilled* and filtered again and again. I will defy any one to say how instantaneously it may receive these same germs on its surface as soon as it is exposed to a polluted atmosphere. There is no surface which can be exposed which is not forever swept by a crowd of organisms floating in the air— aerozoa, as I have named them; many of these we may trace and name, and build theories about them, but there is a vast mass, I believe, which not even the greatest powers of the modern microscope can reach; of those we can see there are very many of which we know nothing; they may be very poisonous, or may have their part in the economy of health. As yet, I am altogether unsatisfied as to their real place in nature be it for good or evil.

"Drs. Lankester and Hogg have of late referred to the investigations made by myself, and published in your columns. It is quite true that these experiments were made at a period of cholera, but I believe I detected nothing then that I could not detect in a healthy season; it is quite possible, however, that 'germs' which in ordinary seasons may be harmless, at peculiar seasons may assume a pernicious character. When, in your columns, I called attention to the possibility of mapping a smell, I had made the attempt. I have the diagrams I then made of the various air-floated matters I obtained from vegetable and animal substances, in a condition more truly expressed by a stronger word than smelling. There can be no doubt that there are floating matters, particles, germs, molecules, fungoid spores, or whatever we may please to call them, which do vary, according to the source from which we obtain them, but I have ever found with these there were others,

to be found at all times in the purest atmosphere. Agreeing, as I do, with those who attribute the spread of contagious diseases, such as cholera or rinderpest, to certain air-borne particles of poisonous matter, I am still of opinion that as yet no one has discovered any particle of which it can be said that it is the special agent of any special disease.

"My own belief is that the danger from all discharges from patients affected with contagious disease exists at its worst when, having become for a time dry, they are afterwards again moistened through damp warm air, or by any other means. I am also of opinion that in a dry state they may give off to draughts of air minute particles, which finding a nidus on any moist mucoid surface, would thus infect. Cleanliness in a sick chamber cannot be too thorough; a cartload of linen and other articles might be sent to the laundress every day, and yet a yard square of dirty linen or of dirty furniture of any kind left for a few days would defeat the most liberal and otherwise careful attempts to keep all things clean. As to the question of boiling water before use, there can be no doubt that it is most advisable, for you do thus give it the best simple purification in your power. I wish people could be persuaded of the fact that no liquid to be used in cooking in any way as food or medicine should ever be exposed to the action of the atmosphere in a bed-room, sick-room, or ward but for the shortest possible time. If patients must have water, lemonade, &c., handy to them at night, let these be kept in stoppered bottles. Let any microscopist expose plain water, gruel, tea, milk, or barley-water, in shallow thin glass plates to a night's air in any bedchamber, sick-room, or hospital ward, and then carefully examine the surface with a good microscope; he will satisfy himself of the fact that such surfaces are of all others, those which receive, to *detain*, a great deal that, for all that we know, may be very deleterious.

"I don't know what water butts may be in London; I know that they are very valuable in the country as breeding places for some of the most interesting organisms we ever exhibit to friends with the microscope. In London I should expect to find them most gratefully prolific. Water originally but partially pure, kept in rotten wood, which probably never was clean, surrounded by all kinds of dirty things and beings, in an atmosphere ever odoriferous, the bottoms and sides of the butts never cleaned, so that vegetation at the sides is nourished by the accumulated deposit at the base, must ever be water of great microscopic promise. I can quite conceive a glass of clean pure water twice a day acting as a powerful tonic alterative in the case of people who have been thus for years vegetarians and insectivorous by compulsion."—*Med. Press and Circular*, Sept. 26, 1866.

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Paris Faculty of Medicine.—This body is likely soon, it is said, to undergo considerable change in its *personnel*, and not before this is required, if it be true, as stated, that no less than seven Professors are incapacitated by age or illness, not to mention M. Trousseau's imminent resignation. The chair of Clinical Surgery, lately filled by M. Jobert, now hopelessly insane, is, it is said, to be immediately filled up.

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Insects Fabricators of Iron.—It is well known that some insects are skilful spinners, but it was not known that some of them fabricated iron. A Swedish naturalist, M. de Sjogreen, has published a curious memoir on this subject. The insects, in question, are almost microscopic; they live beneath certain trees, especially in the province of Smaland, and they spin like silk-worms, a kind of ferruginous cocoons, which constitute the mineral known under the name of "lake ore," and which is composed of from 20 to 60 per cent of oxide of iron mixed with oxide of manganese; 10 per cent. of chloric and some centimetres of phosphoric acid. The deposits of this mineral, may be 200 metres long, from 5 to 10 metres wide, and from 8 to 30 inches thick. —*Rev. de Thérap. Méd.-Chirurg.*, Sept. 15, 1866.

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The New Edition of the French Codex.—It is announced that the new edition of the *Codex Medicamentarius, Pharmacopée Française* will shortly be published. The preface to it, by M. J. Dumas, President of the commission, is published in the *Revue de Thérapeutique Médico-Chirurgicale*, Sept. 1866.

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Obituary Record.—Died, of cerebral congestion, Sept. 16th, 1866, aged sixty-eight years, M. Mélier. Sanitary Inspector-General, and one of the most laborious and ablest exponents of Sanitary Science and public hygiene.

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PUBLIC HYGIENE.

Address on Public Health, delivered before the National Association for the promotion of Social Science at its Tenth Annual Meeting, held at Manchester in 1866. By W. Farr, M. D., F. R. S.—Public health is the subject of inquiry in your third department. Every life here, the life of every community, is surrounded by dangers, which it is the business of science to study and of art to avert. These dangers are of various kinds, and spring from various sources. Enemies abroad and criminals at home are dangers to which every government is alive. There are other dangers not less formidable. Famine now ravaging India, cholera in Europe, early deaths, sufferings in hospitals, fevers in homes, are instances of a class of dangers that we seek to investigate, avert, and disarm.

Health implies more than existence; it implies energy in strength and in intellect. In Anglo-Saxon one word—*hael*—designated healthy man, hale man, brave man, hero; and *hâelend* was healer, saviour. These simple but noble conceptions it is our business to bear in mind. Development, as well as conservation of life, is the aim of public hygiene—the name by which our science is known in the Continental schools. Private hygiene deals with individuals, public hygiene with communities; but, inasmuch as nations are aggregates of men, it is evident that the division into two parts is only made for the convenience of study and of administration. Some things a man can do himself, others can only be done by town councils and imperial governments. It will be an advantage to confine our discussions to the field of public health.

As political economy rests upon the idea of value, so our science rests upon the idea of health, and it is as important to us to find a measure of health, as it is to the economist to find a measure of value. Tha

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measure must be simple, and applicable to all countries. Now, the measure that is in universal use is the rate of mortality: a unit of life loses a certain fractional part by death every moment, and the amount of loss in a unit of time expresses the rate of mortality. The unit of time is always a year, and the rate of morality is found by dividing the deaths by the mean numbers living multiplied into the time. The rate varies from ·020 to ·040 in England—that is, in one place the deaths are 20, in another 40 to 1,000 living, Indeed, the range is still greater without a correction to which I will shortly advert.

In the normal community constituted of persons of all ages by an equal number of annual births, there is a fixed mathematical relation between the rate of mortality and the duration of life. Thus, if the average rate of mortality in two cities is 2 per cent., then the mean duration of the lives of the inhabitants is 50 years in the one city and 25 years in the other. Therefore in saying that rate of mortality measures, it is conversely affirmed that length of days measures the health of nations. As the population fluctuates, certain corrections are necessary; the rates of mortality are determined at various ages, and from these the probabilities of living year by year are calculated and set forth in a life table that determines the path every generation passes over from rising to setting.

The mortality is really a life measure, for the people living to a given sum of births increases in exact proportion as the duration of life increases.

If it is only an indirect measure of some of the elements of health, according to our larger definition it expresses in masses the sickness, measures very accurately the influence of a variety of causes on life, and is a safe guide in practice.

Public health now engages the attention of every civilized state; so we can pass in review the principal populations of Europe, and from the researches of their own statists learn by this measure their comparative health.

I take the population in the lowest stage of health first, beginning with Russia. That empire is emerging from barbarism; and its condition enables us to conceive the state of the population of Europe in the dark ages. The people of various races between the Caucasus and the Arctic Ocean, the Oder and the Ural Mountains, die at all ages, from birth up to 140 years it is said, but their mean lifetime is only 25 years.[1] The marriage rate is 10, the birth rate 45, the death rate 36 (per 1,000 is always understood unless another scale is mentioned). Thus birth, marriage, death, succeed each other rapidly among the sixty millions of people diffused over nearly two million square miles of steppes, forests, farms, and river-side pastures. In Archangel, where the greatest extremes of cold are experienced, the mortality is nearly the same as it is in England; in Esthonia and Courland, on the Baltic, the rate is low; so it is in Finland; while about the Caucasus, the Black Sea, and the Caspian, it ranges from 40 to 52.[2] Whenever the mortality is excessively high in any place its causes can now almost always be discovered; they are familiar enough to us in England, but as they take different forms in different countries, and are the subjects of inquiry in Russia itself, it is not my intention to dwell on them. Russia has emancipated her serfs. Russians have taken a conspicuous part in the international statistical congresses; they are frequently inquiring into what is doing in England; and, if I mistake not, English engineers are now engaged in the water supply of one of their capitals.

Italy, extending from the Alps across the middle of the Mediterranean, offers a strong contrast to Russia; it is divided by the Apennines, breathes the air of the sea, is not frozen by hard winters, is the home of the arts, and inherits the renown of the empire of the world. But the Italian people suffer much; few live to their natural term; the death rate is 30.[3] I speak now of the new kingdom of Italy. The death rate in Piedmont and Lombardy, and in the islands of Sicily and Sardinia, is 29; south of the Po, in Parma, 35: Modena, 31; Romagna and the Marches, 31; Tuscany, 33; Naples, 35; Umbria is the healthiest province of Italy, rate 27; and Rome, thanks to her aqueducts, is perhaps the healthiest city in Italy. Venetia under the Austrians, was in health on a par with Tuscany, 33. It is a peculiarity of Italy that the population of the country is as un-

[1] Reg. Gen. 6th Report, p. 327.
[2] Ibid., p. 330.
[3] Three years, 1862–4. Reg. Gen. 27th Report, p. xxxviii. The mortality of provinces is for the year 1862.

healthy as that of the towns. This low standard of health is the fruit of the former state of things as the new Government has had little time to do more than bring the evils to light, which luxuriated under small paralyzing despotisms. As the science of Italy reveals the evils and their causes, the people will find remedies; and among the first will probably be the restoration of the great drainage works and the magnificent aqueducts of their ancestors. Improved health will increase the military power of Italy.

East of Italy is Greece, which holds only a fraction of the Greeks, about whom little can be said; and Turkey, Syria, Egypt, North Africa. All known about these fine regions of the world is that they are desolated by diseases, are unhealthier than Russia or Italy, and are nurseries of the plague that subjects Europe to the vexatious oppression of quarantine.

Spain, lying west of Italy, between the Mediterranean and the Atlantic, mountainous, and divided by deep cut rivers, was perhaps, when she colonized South America, the healthiest country of Europe. The death rate of Spain is now 28.[1]

Between Italy and Russia, on the Danube, extending from the Carpathians to the Adriatic, lies the Austrian empire, full of natural resources and pervaded to a considerable extent by the industry and science of Germany; yet the death rate of Austria is high: it is 30.[2] The mortality of Prussia is not quite so high; it is 29; in Bavaria, on the Upper Danube, it is 29; in Saxony, on the Elbe, 29. At such rates 72 millions of Germans and their associated races die. In none of these countries do the people live on an average 30 years.

We now enter a healthier region of Europe, of which England is the centre; where the people live, on an average, 35, 40, or 50 years, and where a fuller life is enjoyed. Take Norway, for example, with its Udal proprietors along fiords and streams; there the mean lifetime of the people is full 50 years. The death rate is 17; the birth rate is 34. They are, as the old sagas teach us, at home on the ocean, and emigrate freely. In Sweden as well as Denmark the mortality rises to 22; and the mean lifetime of the Scandinavians is about 44 years.

[1] Four years, 1861–4.
[2] Eight years, 1857–64.

Sweden I may remark, is famous in our science for furnishing Dr. Price with the data from which the first national life table was constructed. In Hanover the death rate is 23; and in Holland, on its canals and river deltas, where the greatest natural sanitary difficulties are found, the mortality is 26,[1] the mean lifetime is 35. In Belgium other difficulties have sprung up; the population is the densest in Europe, thanks to its industry; but the death rate little exceeds 22. If we ascend the Rhine to Switzerland, we there find several healthier cantons.[2]

In France, that varied and beautiful land lying between England and Italy, Germany and Spain, the death rate was 23; in the last year or two it has fallen to 22, as low as that of England.

No variation in the health of the states of Europe is the result of chance; it is the direct result of the physical and political conditions in which nations live. This is so well understood that the people of every country are associated with you in these inquiries, and are watching the progress of the great question of public health in England. Yet its vital importance is nowhere fully recognized; its influence in the history of mankind is lost sight of in the din of war, and in the terrors of revolution. With what just eloquence have Burke and the historians of all nations denounced the furious executions of Paris. But in Germany, including districts under paternal well intentioned sovereigns, some 300,000 men, women, and children are killed every year by diseases, in excess of the numbers dying of the same diseases in France.[3] Under the indolent princes of Italy, the annual life loss in excess exceeded 150,000 lives annually. Not to save in some circumstances is to destroy. Can we wonder, then, at the feverish uneasiness of those great populations, whose instincts have led them at last to coalesce in powerful states?

I now ask you to consider the sanitary state of the United Kingdom. The rate of mortality is 22. The rate is nearly the same in Scotland, England, and Wales. But how fares it with Ireland? Well, as

[1] Sweden, 1841–55, males, 41.28; females, 45.60; Holland, 1850–9, males, 34.12; females, 36.43. Berg and Baumhang. See paper by Hendrick, F. Stat. Soc., vol. xxvi p. 423.
[2] 1857–64.
[3] The mortality in France 1853–62 was at the rate of 23.82; Prussia 1851–60, 29.00; Austria 1857–62, 30.38; Italy, 1862, 31.28.

far as official documents go, the death rate of Ireland is 17; and, after every allowance for defects in registration, which has only been recently established, I do not think the death rate of Ireland can be set higher than that of Scotland.

From the English Life table we learn that the mean lifetime of the nation is 41 years (40.85).[1] and this implies a corrected mortality of 24 (exactly of 24.47) annually, whereas by the ordinary method the mortality is 22 (or 22.45). The difference arises from the increase which throws into the population a mass of young persons at ages when the mortality is below the average. The average age of the dying is reduced from the same cause—it is 29 4 years. Similar corrections of the mortality are required, and will ultimately be made, in other countries.

The mean age of the population by the Life Table is 32 years; the mean age of the enumerated population in 1861 was 26½,[2] the difference of 5 5 years arises from the same cause. If a normally constituted population has lived 32 years, it will live 32 years under the same law of mortality;[3] but in England the age of the people is now 26.5 years; and they will live 35 6 years on an average. As they are younger they have an ampler prospect of life before them than a stationary population.

You are aware that more boys are born alive than girls, and the boys dying in greater numbers, this provision of nature brings the sexes nearly to an equality of numbers at the age of marriage. Thus, of 1,000[4] children born in England, 512 are boys, 488 girls; 334 men, 329 women, live to the age of 20. The excess of boys is reduced from 24 to 5; and if there was no emigration and foreign service, the men of the age 20–40 would exceed the women in number. An unchanging 1,000,000 of annual births will produce, according to the law of vitality in England, a population of 41 389,940, consisting of 20,426,138 males, 20,432,802 females, large numbers differing quite inconsiderably.

The births registered in the United Kingdom in 1865, exclusive of the islands in the British seas, amounted to 1,006,223, and this is below the actual number, as all the births are not registered in Ireland or England. The population of the United Kingdom, including the islands, is now estimated at 14,775,810 males, and 15,553,397 females. England differs from the other countries of Europe in this respect;[1] it has 250,356 men in the Army, Navy, and merchant service abroad, on the seas, and in English possessions. This leaves 14,525,454 males at home, against 15,553,397 females. The females exceed the males in the United Kingdom by 1,027,943. After deducting the men abroad having English homes, the number is reduced to 777,587 women. The proportionate number is greatest in Scotland, least in Ireland.

Nevertheless, if our calculation is correct, the men must be somewhere in existence; and, in fact, in America and in Australasia alone at the last census, the males found exceeded the females by nearly a million (972,530). Allowing for the share of other nations in the surplus, there can be no difficulty in identifying the men of which the 777,587 women at home complete the calculated couples. The men are in Newfoundland, New Brunswick, Canada, Australasia, and the United States, whither the women have hitherto hesitated to sail from home across the ocean; but with constant magnetic communication, commercial intercourse, and the intimate union of the people on both sides of the seas, the equilibrium of the sexes cannot fail, in the end, to be re-established.

It is gratifying to find that the health of the English race on the other side of the seas, so far as we can judge from imperfect documents, is not worse than it is in England; and that those rising communities are eager to adopt all the sanitary improvements of Europe. In some respects they have gone ahead of Europe; I may refer to the magnificent aqueduct pouring the fresh streams of a mountain river into New York since the year 1842, when Paris and London were drinking polluted waters from the Seine and the Thames.

A word on the growth of population in England, which is unquestionably one of the weightiest of all our hygienic problems. The population of the United Kingdom was 16,302,410 in 1801; it is now 30,329,207.

[1] "English Life Table," p. 22, based on returns of population, 1841 and 1851; and 6,470,720 deaths in 17 years, 1838–54.

[2] "Report on Census," 1861, p. 110.

[3] See this curious law demonstrated in "English Life Table," Introduction, p. xxxii.

[4] See "Life Table," p. 24.

[1] Census Report, 1861, p. 5.

Population naturally increases in geometrical progression; and in this country the rate of increase was very uniform during the fifteen years of war down to 1815 and the fifteen years following. After the reform of Parliament and Catholic emancipation, so well calculated to content the people, the rate of increase decreased slightly down to 1841; and then rapidly, after the potato blight and the repeal of the corn laws, during the exodus, down to 1851; and since more slowly. The decennial rate of increase was 15 per cent. (1821–31), 11 per cent. (1831–41), and in the last decenniad (1851–61) it was 6 per cent. Thus our population increases at a decreasing rate. In the first thirty years of this century the addition to the population was 8,121,178, in the second thirty years it was 4,935,339. The rate of increase was 50 per cent. in the first and 20 per cent. in the second period.[1] The great perturbation took place in Ireland, where the population rose 2,000 000 in the first, and fell 2,000,000 in the second period. In England the population increased steadily 5,000,000 in the first, 6,000,000 in the second period.[2] The change in the rate of increase is due to no decrease of energy, but to the flood of emigration, for the population, like a mighty river, flows into America and Australasia. The population of the American Colonies, of the United States, of Australasia, and of the United Kingdom was 20 000 000 in 1801, 38,000,000 in 1831, and 65,000,000 in 1861. Here is an increase of 18,000,000 and of 27 000,000, or in the aggregate of 45,000,000 in sixty years; and after deducting sufficient numbers for the increase of alien races, a residue of increase is left equal in its multitude to the present population of France. The English race thus unites Europe with America, and attains, while multiplying freely on both sides of the Atlantic, nearly the same standard of health.

I have, in this rapid survey, necessarily treated the health of nations collectively; but each nation consists of parts differing widely in health. Thus, in Prussia the death rate is 25 in Pomerania, 36 in Posen; 25 in the Rhine provinces, 36 in Prussia proper. France presents similar disparities. And in no countries are the disparities greater than in England. Districts of this kingdom, more populous than Norway, are as healthy as Norway; whilst several of our cities teeming with industry, intelligence, wealth, and population, pay a death-toll as high as Russia. I enter into no details, because this subject has been discussed in the section by gentlemen deeply interested in these districts, who have developed the facts, and have been able, after laying bare the causes, to say that they see the way to effectual remedies; so that in city and village alike the health of the people may increase faster than their numbers.

In the great Arsenal, at Woolwich, the other day, I was much struck by the vastness of the operations: there you see the latest inventions of chemistry and mechanics turned to account; children, stalwart smiths, engineers, and men of science are all engaged in casting bullets, making cartridges, filling costly Armstrong shells, building up ordnance of terrific power to arm iron ships, or inventing new explosives. I confess that the thought that ever bullet was cast with the deliberate intention of killing a man, made an impression on my mind; and this was deepened by the reflection that the Arsenal is necessary, as similar operations are going on all over Europe. Nations are passionate rivals in the art of destroying life in war. Why should they not throw the same ardor into the art of salvation in time of peace?

Life can be saved by studying the causes of its destruction—injuries and diseases. Lightning had no sooner been identified with electricity, than Franklin invented the lightning-conductor. With his knowledge of flame and gases, Davy invented the safety-lamp, to save men from the terrible effects of explosions. The same object is secured now effectually by the improved ventilation of mines. Fire-escapes and fire-guards save hundreds of lives from the flames. Lifeboats rescue mariners from the waves. Chemistry finds antidotes for poisons. Surgery, armed with Harvey's discovery, ties bleeding arteries. From Jenner, Medicine has learnt by vaccination to prevent smallpox. And this brings us to the class of zymotic disease, over which new power has been acquired recently by the discovery in England of the laws of its propagation.

A surgeon dips a lancet into the pustule of a smallpox patient; on its point is a

[1] The first ratio $r = 1.4981$, the square root is 1.2239; which is nearly the second ratio = 1.2021.

[2] 4,933,467 in 1801–31, and 6,124,854 in 1831–61; or 54 per cent. and 44 per cent. on the population.

drop of transparent lymph; and that lymph, mixed in the blood of a child that has not before had the disease, reproduces the lymph in new pustules, which will again propagate the disease among other children. The matter is volatile, and other children brought into the same atmosphere, are said to catch smallpox. If the lymph is derived from a cowpox pustule, it reproduces cowpox. In large lying-in hospitals it has been found by repeated experience that childbed fever, or what I call *metria*, is generated: one woman falls ill, other women take it; every fresh patient that enters dies; and if the hospital nurse attends a lady out of doors, that lady will probably die of childbed fever. Erysipelas, pyæmia, and gangrene are generated when you crowd wounded soldiers in military hospitals; and the specific matter of each of these diseases produces the same specific diseases in other soldiers.

Typhus has been generated in gaols, and has infected the judges in courts as it infects physicians in fever hospitals. Here is a large number of diseases which we know how to produce; and a second group equally numerous we know how to propagate—such as measles, scarlatina, hooping-cough, and smallpox. In the statistical nosology I classed all diseases of this kind together, under the head of zymotic diseases; and in the analysis of morbid phenomena gave names to the different species of matter generated in each malady. Thus, selecting a few, the matter of smallpox (variola) is called *varioline;* of cowpox, *vaccinine;* of erysipelas, *erysipeline;* of scarlatina, *scarlatinine;* of syphilis, *syphiline;* of typhus, *typhine;* of dysentery, *enterine:* of cholera, *cholerine*.[1] These matters introduced into the blood directly by inoculation, or by air, or by water, only induce their transformations in a certain number of the persons exposed to their action. They vary from day to day in strength. Cases of smallpox, for instance, occur every week in London: few children die of smallpox for weeks together; when suddenly the *varioline* becomes active, is multiplied with redoubled velocity, destroys large numbers, and after a time again becomes quiescent. All zymotic diseases follow this law, and are hence called epidemics.

[1] Registrar-General's 4th Annual Report, 1842, pp. 186—216.

endemics, plagues; which, as their cause is not evident, have often been referred to supernatural agency. In their course they are generally influenced by atmospheric vicissitudes: but the zymotic stuff probably acquires its extreme diffusiveness in some wretched families under hygienic conditions that favour its creation. Asiatic cholera thus originated in the delta of the Ganges, in spots where the huts are on mounds, surrounded with pits, which are the receptacles of dejections and of the stagnant water the natives drink. Jameson says, "Bad water no doubt sometimes immediately induces the disorder."[1] In India they had advanced scarcely any further in the etiology. The English reports on the epidemic of 1832 and the elaborate official French report[2] discussed all the conditions except one likely to influence its course, and their results were purely negative. They stated, but did not solve, the problem of the disease. The English system of registration was established in 1837, and in the epidemic of 1848–49 the age, profession, date of death, and the place of death of each person by cholera was published by the Registrar-General in the London weekly tables of mortality. These tables were freely distributed among men of science, who had thus an opportunity of studying the facts. London presents a favourable field for the analysis of epidemics. It has a vast population, spread over a large area at different elevations, arising from ground below the Thames level to Hampstead and Norwood. The population exists in every degree of density, in every degree of poverty and wealth. It was supplied in 1849, by eight companies, with unfiltered water, some of it drawn from springs, the rest from different points of the Thames and its tributary the Lea. At that time the sewers of London poured their contents into the Thames at different parts of its course, so that the waters of the companies differed very much in impurity. At Hungerford Bridge it was charged with soil, and higher up the tidal stream the water was comparatively pure. It was immediately found, on examining the returns, that cholera was much more fatal on the south side of the Thames than on the north; and at the close

[1] Cholera Report to Reg.-Gen., p. lxxxvi.
[2] Rapport sur la Marche et les Effets du Cholera Morbus dans Paris, 1834.

of the epidemic, calculation showed that the mortality had been at the rate of 41 on the north, and 120 in 10,000 on the south banks. The two populations differed in many respects, and further analysis was necessary. The population in 38 districts, each[1] a large city in magnitude, was variously grouped according to (1), wealth determined from rated value, (2) density, (3) elevation, and (4) water supply. It was shown that density and wealth in their different degrees had an influence on the mortality of the epidemic; but that the effects of these influences were completely overwhelmed by the influence of water and of the elevation of the soil. Thus, the six districts supplied with the least impure water lost, in every 10 000, 15 by cholera; the fifteen districts getting still more impure water lost 48; those getting the water from the parts of the Thames saturated with sewage lost 123. The air and the water of wells, and the water containing impurities in suspension, running along tubes underground from the river up the sides of heights, contain different amounts of such matter in suspension running along tubes underground from the river on the sides of heights, contain different amounts of such matter in suspension at different elevations; and it was found that the mortality ranged from 174 deaths by cholera in 10,000 people on a level with the Thames, to 99 among those living on ground 10 feet higher, and thus the mortality fell to 53, to 36, to 27. to 22, to 20, to 8; as you ascend, 30, 50, 70, 90, 100, 350 feet above Trinity high-water mark. In the epidemic of 1853-4, and in the epidemic of 1866, the same laws prevailed.

That was all that could be rigorously determined in 1848-9, and the experiment was incomplete, as the drainage of the ground and other conditions in which the people of South London lived differed in many respects from the corresponding conditions on the north side of the Thames. South London is supplied chiefly by two companies. In the interval between 1849 and 1854 one company supplying South London was driven higher up the Thames, and got above Teddington Lock water uncontaminated with London sewage, while the other company still drew its water in 1854 from the impure stream below. Here was an experiment on a grand scale. Asiatic cholera was epidemic once more, and retained its full power of destruction in the districts still supplied with impure water; but it was immediately discovered in the returns of the weekly tables that the mortality in the districts supplied with the better water was diminished. The difference was striking in houses of the same street supplied by the two companies, and it was observed every week in every district. After the epidemic was over the two companies furnished lists of all the houses which they supplied, and when the deaths by cholera in these two classes of houses, both in 1849 and 1854, were taken out at the General Register Office and tabulated, the result satisfied the Committee for scientific inquiries of the Board of Health[1] that the diminished mortality was due to the change in the quality of the water.

This reasoning involves no theory. The result is arrived at by induction drawn from a vast number of instances all concurring. But I am bound to notice here an important theory which was advanced in 1849 by Dr. Snow, a London Physician, who died young, but whose name will not perish. This, in a few words, is Snow's theory:—The rice-water discharges are to cholera what the lymph (varioline) is to smallpox; the matter is generated in the body, it is multiplied in the intestines, and diffused by direct handling or by water and, I should add, by air in certain states carrying it suspended as dust—cholera-dust.

Dr. Baly, in his admirable but cautious report to the College of Physicians, decided against the theory, and, in fact, the evidence then in its favour was not conclusive. But Dr. Snow persevered; he collected instances of the communication of the disease through pumps, wells, and rivers: and, in 1854, inquired at every house of certain districts where deaths from cholera occurred in Southwark. Thus he collected many new confirmatory facts. Some links had been left incomplete in the verification of the law that cholera matter (cholerine) is diffusible through water; these have been supplied in the present year partly by what I cannot but consider a deplorable accident.

[1] Registration Districts of London, 36; two were subdivided.

[1] The Committee consisted of Arnott, Baly, Farr, Owen, Simon. The subsequent report by Mr. Simon gives the final results of the Committee's investigations.

South London, it will be recollected, was still supplied with impure water in 1854 by one company (the Southwark), and it suffered severely in the epidemic of that year. In the field of the other company (Lambeth), the mortality was much reduced, but was not inconsiderable. In 1866 South London was supplied with water by the two companies from the purer sources; the shallow wells were dried by the metropolitan drainage, and the deaths by cholera in all the districts, holding 873,548 people, were not so numerous as the deaths had been in 1854 in a single district. Thus you have these sequences, in the Lambeth field, impure water, 1849, cholera terribly fatal—pure water, 1854, cholera much less fatal; in the Southwark field, impure water in 1849 and in 1854, cholera terribly fatal in both years; in 1866, both field with pipes interlaced, in South London, supplied with the purer water—mortality from cholera comparatively slight, but sufficient to remind us that the water is not yet perfectly pure.

Cholera had been epidemic in the continental cities since 1865, but London rested secure, expecting to escape with comparative impunity, when lo! in July, the weekly deaths by cholera sprang up from 6 to 14, to 32, to 346, to 904, to 1053, with an unexampled velocity, and threatened to renew all the horrors of the former plagues. The weekly returns showed that multitudes of men, women, and children, spread over an area of about ten square miles, were indiscriminately struck down by diarrhœa or cholera.

In East London 3613 people perished in six weeks. The great destruction of life occurred in every district, nearly every sub-district, supplied from the Old Ford reservoirs of one of the eight London companies, and to the same extent nowhere else. These reservoirs are close to the Lea, which is a tidal river, polluted with the sewage of West Ham and of East London. In Manchester the water is immediately under the control of the Town Council, and you can know all about the supply; but in London that is not the case, as the water is supplied by private companies on strictly commercial principles. The directors are not bound to tell us precisely what their servants do, and they have not done so; but circumstantial evidence irresistibly shows that polluted water was distributed over all the area of extraordinary mortality during a certain number of days, with the same result as in previous epidemic years. The source of mischief was no sooner pointed out than the plague began rapidly to decline; it appeared to be under control, and the mortality by cholera in East London is now as low as it is in the rest of the metropolis.

When zymotic matter or any impurity is thrown daily into the mains, pipes, butts, houses, and, I may say, bodies of a population, it is irregularly distributed, and requires many successive daily changes to eliminate it; thus, when impure water is supplied for three days only, it may take thirty days to eliminate it. This may be demonstrated mathematically, and be illustrated by experiment.

I may add that, although the distress from the loss of thousands of children and parents in an epidemic is never wiped away, yet in East London it has been mitigated; the people behaved with courage and patience; they helped each other in danger, and they were helped by enlightened English charity. The Queen herself came to their relief; Mrs. Gladstone, Miss Marsh, Miss Sellon, and Miss Louisa Twining, treading in the steps of Miss Nightingale, administered relief to the sufferers; the Bishops of London and the Lord Mayor upheld the honour of their high office by indefatigable services. The medical men, and, it is right to add, the clergy, nobly did their duty; the local authorities, to a greater extent than they ever did before, carried out the judicious recommendations of the Privy Council. House-to-house visitation was in many cases in use for a time.

By these means, by the exertions of the engineers of the companies, and by the early discovery of the source of the terrific mortality in East London, the plague has been stayed; we now know how Asiatic cholera can be subdued. In London twenty thousand lives have been saved. This is an achievement of the science of health which reflects some glory on England, and of which all the world will enjoy the advantage. It is due to many years of labour—to the labour of Jameson, Scott, Orton, Balfour, Martin, Parkes, in India; to Sutherland, Smith, Baly, Gull, Simon, and especially to Snow, in England; to the English registration of deaths, which enabled us to demonstrate by several experiments

in the largest city of the world, the fatal effects of water tainted by impurities.

How did it happen that the disastrous effects of the diffusion of this matter through water were not discovered in Paris or elsewhere? For this simple reason, that when the observer has under his eyes a population all supplied with impure water, he cannot logically refer the effect to the specific cause. For this happens in cholera, as in all zymotic diseases, only one individual in a given number is susceptible; for the sake of illustration, say 1 in 4. Only one in the number susceptible (say 1 in 5), by chance comes in contact with the stuff; and only one vessel of water in a given number (say 6) contains a dose strong enough to induce Asiatic cholera, as it is called. Then, by the doctrine of chances, only 1 in 120 (that is, $\frac{1}{5} \times \frac{1}{6} \times \frac{1}{4}$) will be attacked, and about 1 in 240 will die of the disease. Great numbers will be attacked by diarrhœa and milder forms but 119 will not be attacked by cholera while 1 is attacked. Here are 119 instances in favour of and 1 against the water.

In the worst district of the East London field 193 in 10,000 people died of cholera. Say that 386 were attacked, then 9614 were not attacked, and the health officer might reason thus: 9614 persons in this district exposed to the cause—water—were not attacked, therefore the disease was not caused by the water; and of the 386 attacked some drank no water, the fact being that they were tainted in other ways. This logical difficulty is the origin of the greater part of the disputes on contagion. We overcome it by comparing the mortality of cholera in all the East London districts, the Lambeth districts, the Southwark districts, with the mortality of all the districts—many of them similarly situated as to condition—supplied with water from other sources. As the difference is uniformly enormous in successive trials at distant dates, the conclusion is irresistible.

In Manchester the people have, with great credit to their intelligence, secured a supply of pure water; in fact, the systems of Manchester and of Glasgow are models to other cities. But Manchester retains the excreta of the sick from all zymotic diseases, with other impurities, close to the dwellings and under the faces of the people. By comparing the mortality of the city so organized with that of London when the metropolitan drainage is in full operation, and with that of other cities where such matters are now carried off by water, you will be able to analyze the effect of your system of arteries without veins, and I suspect that it will be decisively condemned by the result. The effect of a multitude of other causes on health, such as overcrowding, uncleanliness, and drunkenness, can be tested by the same methods.

To render our investigation of causes affecting public health complete, there should be a public registration of every form of sickness and infirmity, as well as tests of strength by the quantity of work performed, either mental or muscular. The conscription and recruiting examinations are the only tests now in use.

The sanitary society in Manchester has commenced some work of this kind, and will, I hope, persevere. In the diffusion of sound, practical, sanitary information, the Ladies' Sanitary Association in London has already rendered services which we are bound to recognize. The Universities of England will, I hope, teach, as the Continental Universities do, the doctrines of public health, and by recognizing the doctrines in granting degrees, as suggested by Mr. Rumsey, they will promote the health of their country. Manchester and all our cities will, like Liverpool, Glasgow, and some districts of London, have accomplished officers, educated in the end specially for the purpose, keeping incessant watch over their health, like tutelary geniuses, and doing good not only to the inhabitants, but to mankind.

For what good has been done hitherto by hygiene, however striking in building up healthy generations, is nothing compared with what remains for it to accomplish in times to come.

Let there be a small ratio of improvement among the millions born every year in the successive generations of our own race—in the races of Europe—and under that law of geometrical progression even with which the world has been sometimes terrified unreasonably, mankind will attain a degree of excellence of which we have no conception. Healthier, happier men may become as by miracle only a little lower than the angels in the golden age, the paradise of the future.

How far we are from this consummation we are reminded by the losses of our friends and fellow-labourers. Since we met last

year, Sir Charles Hastings, President at York of the Health Department, is dead He was a man most friendly in his nature, and devoted himself to the organization of a great Medical Society for the promotion of science. His life was crowned with success; and he had the supreme felicity of seeing his son lay the foundations of this Association, in conjunction with some of the greatest and some of the best men of the age.—*Med. Times and Gaz.*, Oct. 13, 1866.

MEDICAL NEWS.

DOMESTIC INTELLIGENCE.

Health of Philadelphia.—The bill of mortality for the last five weeks, which we give below, shows that cholera and bowel affections have gradually diminished, and that, during the past week, not a single death from the former disease has been reported. The first cases of death from cholera were in the week ending July 14th, when 3 deaths were reported, and it reached its height during the week ending Oct. 13th, when the deaths were 127; thus the disease prevailed during a period of 18 weeks, which is rather longer than the average period of its prevalence in any one locality.

The highest mortality from bowel affections as well as from all diseases, was, during the week ending July 21, when the deaths from bowel complaints numbered 238 and from all diseases was 716; while during the week ending Nov. 24, the deaths from the former had dwindled down to 7 and the general mortality to 255. The health of the city may be now regarded as good. The only disease in which we find a marked increase is scarlet fever, the mortality from which during the week ending Nov. 24th, was 20.

1866.	Mortality in Philadelphia from						
	Cholera Infantum.	Diarrhœa.	Dysentery.	Cholera Morbus.	Cholera.	Total Bowel Affections.	Total Mortality from all diseases.
Week ending Oct. 27,	7	6	3	4	43	63	295
" " Nov. 3,	4	3	9	4	41	61	285
" " " 10,	4	6	1	2	19	32	263
" " " 17,	0	4	1	0	5	10	233
" " " 24,	1	2	0	4	0	7	255

New Hampshire Medical Institution, Dartmouth College, Hanover.—At the annual commencement of this institution held on the 31st of October, the degree of M. D. was conferred on 28 candidates. The increase of fees, it is stated, has not diminished the number of students, the class not having been larger except at one session, for the last twenty years.

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University of Michigan.—Prof. Samuel G Armor writes to us that "the class in the Medical department of this University the present session numbers over 500. Our students come from a great distance. I believe every State in the Union is represented; besides quite a number from Canada and other foreign countries.

"The steady and rapid growth of the University has been very wonderful, and especially when we reflect that it costs a student at least *twice* as much as any other school west of the mountains, St. Louis alone excepted. The Regents charge $30 for every student *out of the State;* this added to travelling expenses, and the two months' additional time, make the expenses of the student much greater than in any of the Western Schools, with the exception mentioned. Our term is *six months*, no student getting his ticket till the close of the term. We think we have made a move in the right direction by establishing a *six months' term*, and having but four lectures a day."

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Toland Medical College.—At the Annual Commencement of this Institution, held Oct. 2d, 1866, the degree of M. D. was conferred on ten candidates.

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Philadelphia College of Pharmacy.—Mr. John M. Maisch has been elected to the chair of Pharmacy in the school of this college, made vacant by the resignation of Prof. Proctor, who has filled the chair for many years with signal ability. The new professor is well known as one of the ablest pharma-

centists in this country, and he will doubtless fully maintain the reputation of the school.

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Obituary Record.—Died, in Columbia, S. C., Oct. 15th, in the 57th year of his age, R. W. Gibbes, M. D., an eminent practitioner and naturalist.

—— At Chicago, Oct. 10th, of cholera, Daniel Brainard, Professor of Surgery in Rush Medical College.

—— In Cincinnati, Oct. 20th, 1866, aged 60 years, Brig.-Gen. Charles S. Tripler, Surg. U. S. A., and medical director of the Department of the Lakes. Dr. T. was one of the oldest surgeons in the army, and was highly esteemed for his ability and zeal, as well as for his honourable conduct, during his long and faithful service.

—— At Greenwich, N J., April 23d, 1866, William Belford Ewing, M. D., in the 90th year of his age.

FOREIGN INTELLIGENCE.

Influence of Sleep on the Appetite and Reparative Powers.—If the sleep be broken, the appetite, with digestion and assimilation, are greatly impaired. Indeed, too much attention cannot be paid to this point, for from the loss of appetite patients rapidly waste, and the reparative parts of the system are greatly lessened, and thus the recovery is greatly retarded. Indeed, the loss of appetite resulting from want of sleep may completely wear out the patient, and be the chief influence causing death. It is thus of the utmost importance to secure to patients sufficient sound and refreshing sleep. This should always be accomplished when possible without the administration of medicines. The ventilation of the room should be carefully looked to, the diet must be carefully regulated, and regard must be paid to the amount of stimulants given. Often sleep is prevented by these latter being administered too late in the evening, or, on the other hand, if patients be very weak, their absence may cause wakefulness, and patients previously restless not unfrequently fall into a refreshing sleep when stimulants are freely administered. All undue exeitement before the usual time of sleep must be avoided. If pain prevents sleep, this must be allayed; and if the restlessness be caused by cough, this should be remedied. The cough of phthisical patients not infrequently results from sore-throat. This is then red, injected, and it may be ulcerated. In such cases local applications to the throat are efficient remedies; one of the best is that recommended by Dr. Edward Smith. An eighth or tenth of a grain of morphia dissolved in a drachm of syrup or glycerine should be either painted on the throat with a soft camel's-hair brush, or, which is better, swallowed slowly. This application frequently allays the cough, and allows sleep. If the cough proceed from irritation in the chest, this may often be allayed by counter irritation under either or both clavicles. For this purpose either a mustard poultice, or a blister, or a strong solution of iodine may be applied. Inhalations, moreover, often succeed when given to allay cough: iodine or creasote inhalations are often of greater service than those of simple steam. The patient should be directed to rinse out a jug with boiling water to heat the vessel, and then to pour into it a pint or a pint and a half of boiling water; into this twenty drops of the tincture of iodine or the same quantity of creasote should be dropped. The vessel should then be covered over with a towel, and the patient must put the mouth and nose under the towel. This inhalation should be continued for five or ten minutes. If the cough be paroxysmal and violent, a mixture of laudanum with some chloric ether and tincture of lobelia inflata may often be given with advantage.

Sleep should always be obtained if possible without the use of large doses of opium, for this medicine itself lessens the appetite and often greatly interferes with the other functions of the body. The practitioner has to decide whether greater harm will result from want of sleep or the administration of opium. Patients exhibit great individual peculiarities in respect to the action of opium, and thus the above question can only be decided by a trial of the action of this medicine. With many patients this causes much excitement, sometimes of a pleasant, at other times of a disagreeable kind. With many it destroys the appetite or constipates the bowels; in such cases the opium may inflict even more harm than the want of sleep. On the other hand, some patients under its use fall into a refreshing sleep, and are in no other way affected by its administration. It should be the anxious endeavour of the physician to cure his patient with the smallest amount of medicine possible.—*Med. Times and Gaz.*, April 21, 1866.

Hygienic Precautions against Cholera. The *Gazette des Hôpitaux*, Sept. 22, contains a capital paper on Hygienic Precautions against Cholera, drawn up by the Comité Consultatif d'Hygiène, and addressed to the Minister of the Interior. It states that the mortality caused by the Paris epidemic in 1865 was much lower than that of 1832, 1849, and 1854; that out of the 300 women employed by the Bureau de l'Assistance Publique in washing and cleansing the linen of the cholera patients, not one had died of cholera; and that only two cases had occurred amongst the 911 persons employed as bearers or otherwise at funerals. These good results are attributed to sanitary and hygienic measures public and private. The report proceeds to discuss the merits of most kinds of disinfectants, and for purifying water gives the preference to vegetable charcoal over the permanganate of potass. The form recommended is *braise de boulonger*—Anglicè, "baker's breeze," which, we suppose, is a sort of charcoal remaining from the wooden fagots employed to heat ovens. This substance is directed to be put into the fountains which supply drinking water, so as to form a filtering bed in the proportion of two kilogrammes to every hectolitre of water, and it is to be renewed weekly. The sulphate of iron is the favourite disinfectant for *fosses d'aisance*, drains, etc. We are somewhat surprised to see ammonia recommended as a gaseous disinfectant on the ground of its opposing the growth of mould, microscopic fungi, etc., and of its exercising a favourable influence on those who breathe it. In England we think the contrary in both particulars. Disinfectants, as carbolic acid, etc., should be placed at every aperture, by which air escapes from a cholera ward, so that the disease may not be propagated in the vicinity. Such are some of the points which strike us as novel in this useful paper.—*Med. Times and Gaz.*, Sept. 29, 1866.

Curious Physical and Allotropic Properties of Acetate of Soda.—Prof. Jeannel, of Bordeaux, presented to the Academy of Sciences, a note illustrative of the "History of Acetate of Soda," in which some curious physical and allotropic properties of this substance are detailed. We have not yet had an opportunity of seeing the paper, but M. Legrand, in the *Union Méd.* for April 14, gives a brief account of some of its contents. From this it appears that crystallized acetate of soda melts in its water of crystallization at a temperature of + 58 Centigrade, and when it is exposed to cold, after being dissolved, it crystallizes at this temperature, which remains stationary during the whole time that the crystallization continues, so that acetate of soda in crystallizing presents a fixed point at 58° C., just as water, in the crystallized state, presents in melting a point at 0° C. Dissolved acetate of soda which is exposed to cold but secluded from the air, either in a vessel that is corked or one that is simply covered over, does not crystallize; but what is in the highest degree surprising is that, while cooling, thus protected from the air without crystallizing, it retains in a latent condition the greatest portion of the caloric which it had absorbed when entering into a state of solution. This caloric reappears and is disengaged when the crystallization of the salt is induced by simply exposing the solution to the air on uncorking or uncovering the vessel which contains it.

This singular property leads to a curious result. The temperature of 60° C. is easily obtainable from the sun's rays concentrated under a glass frame, and therefore the solar heat suffices for the solution of acetate of soda. But if this solution be effected in a corked or covered vessel, it will retain the greater portion of the caloric absorbed, and will restore this when convenient on the vessel being opened. And the quantity of caloric so absorbed is considerable, for 1 kilogramme of the acetate melted and cooled down to 0° C. will disengage, on removing the crystalline condition, sufficient caloric to melt 360 grammes of ice or raise 360 grammes of water from 0° C. to 79° C.

"In fine, here is a means of magazining solar heat. What will come of it in practice? Will human industry be able some time hence to store up for winter a provision of caloric which has been collected during summer? Why not? The observations of M. Jeannel are, as it were, the first steps on this seemingly fantastic path."—*Med. Times and Gaz.*, April 21, 1866.

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Presence of Marine Salt in the Maritime Atmosphere.—M. Gillebert-Dhercourt read a memoir at a recent meeting of the Academy of Medicine on the "Presence of Marine Salt in the Maritime Atmos-

phere," founded upon a long series of investigations conducted at Monaco. From these he concludes that—1. There exists at the seaside an atmospheric zone which is constantly impregnated with saline particles. 2 The distance from the shore at which these particles are met with at Monaco, justifies our assigning this zone a horizontal extent of at least 400 to 500 metres, and an elevation of at least 70 metres. 3. The proportion of such particles is larger in proportion as the portion of the atmosphere in which they are sought for is near the sea. 4. This results from the pulverization of the water, which takes place on the crest of the wave, and for this it is not necessary that the sea should be very rough. 5. The transport of saline molecules may take place through the winds to such a distance that very apparent traces of sea salt are found in rain water far from the coast. 6. This must not be confounded with the droplets of water which the winds raise from the surface of the waves.—*Med. Times and Gazette*, Oct. 13, 1866.

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Hydatid in the Brain.—On a post-mortem examination of a German governess who died suddenly at Pimlico, a hydatid, the size of a small nut, containing the ova of a tapeworm, was found in the right hemisphere of the brain. The cavities of the brain contained about six ounces of serum, and six or seven hydatids were found in the fourth ventricle.—*Lancet*, Oct. 27, 1866.

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Poisonous Nature of Crude Paraffin Oil.—At a recent meeting of the British Association, Dr. Stevenson Macadam read a paper on the deleterious effects produced on fish in streams by the discharges from paraffin works. The spent acid liquor and the spent soda liquor are the most serious discharges which escape from paraffin oil works, and their influence upon the health and life of fish is much more decided than the paraffin oil itself. The spent acid liquor consists of the sulphuric acid which has been added to the crude oil, accompanied by tar products, including picoline and other basic oils. It is a black tarry liquid of the consistence of molasses, with a somewhat sulphurous odour, and a very small quantity added to water confers upon the latter poisonous properties. In one instance, Dr. Macadam found this spent acid liquor which was collected, somewhat diluted with water, to possess the following powerful effects upon fish: 1. When the liquor was taken by itself, and fish emersed therein, they were dead in five minutes. 2 When the liquor was diluted with three times its volume of good stream water, and fish introduced into the mixture, they were killed in ten minutes. 3. With one of the liquid and twenty of water the fish died in fifteen minutes. 4 One of the liquor and hundred of water killed the fish in fifteen to twenty minutes. 5. One of the liquid and one thousand of water was poisonous to the fish in two hours: whilst in one of the liquor to ten thousand of water, the fish were not killed by their immersion in the mixed liquid for twenty-four hours, but were apparently sick and prostrate. The spent soda liquor which has been employed in treating the oil which had been previously acted upon by acid, is necessarily decidedly alkaline and caustic in its nature. It has extracted from the oil, and retains in solution, more or less carbolic acid and its homologues, and the poisonous nature of the spent soda liquor is doubtless materially augmented by the presence of these acids. One sample of this soda liquor which was flowing from a paraffin oil work, and which contained extra water, proved destructive to fish in ten minutes; diluted with three parts of water, it killed fish in twenty minutes; with twenty of water, the fish were dead in twenty-five minutes; with one hundred of water, the fish were killed in thirty minutes; diluted with a thousand times its volume of water, the soda liquor was destructive to fish in twenty hours; whilst in ten thousand parts of water the fish were not killed, but were apparently slightly sick. Experiments were also made with crude shale oil and the refined oils obtained therefrom, and with Pennsylvania petroleum and the refined oils extracted from it. The crude shale oil was destructive to fish in the proportion of one of the oil to one thousand of water, in twelve hours. The Pennsylvania petroleum, in the same proportion, did not kill the fish for twenty-four hours. The refined oils acted in a corresponding manner on fish; thus the refined shale oil, in the proportion of one to a thousand of water, killed the fish in twenty-four hours, whilst the refined Pennsylvania oil did not prove destructive till two days.—*British Medical Journal*, Sept. 15, 1866.

Cholera in London —This epidemic is gradually, but very slowly, abating in London. The number of deaths from the disease during the week ending November 3d was 73, no less than 28 of which occurred in the districts of Woolwich Dockyard and Plumstead. The deaths from diarrhœa during the same week were 28.

The deaths from cholera during the succeeding week, ending Nov. 10, were 67, and from diarrhœa 33; total 100.

The epidemic may be considered as having commenced in the week ending June 21, when 21 deaths from cholera and diarrhœa were reported, and to have reached its maximum in the week ending Aug 4th, when 1407 deaths from these two diseases were reported. Cholera still lingers in London, although it has prevailed already 24 weeks.

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Paris International Medical Congress for 1867.—The Committee appointed to organize this Congress has issued its conditions and programme. The Congress, which is to last a fortnight, will be opened on the 16th of August under the auspices of the Minister of Public Instruction. National members will contribute each 20 francs, but foreigners who announce their wish to take part in the Congress will be exonerated from all contributions. The Committee, in its programme, proposes seven questions for discussion, and members wishing to propose other subjects than those contained in the programme must communicate their essays to the Committee at least three weeks before the time of meeting. No communication must occupy more than twenty minutes in reading. The Committee proposes the following questions, and has published an elaborate commentary on each in order to illustrate the indications of the points sought to be brought out. 1. The anatomy and pathological physiology of tubercle; tuberculization in different countries and its influence on the general mortality. 2. The general accidents which lead to a fatal termination of surgical operations. 3. Is it possible to propose to the various governments some efficacious measures for restraining the propagation of the venereal disease? 4. The influence of the alimentation employed in different countries in the production of certain diseases. 5 On the influence of climate, race, and the different conditions of life on menstruation in different countries. 6. On the acclimatization of European races in hot countries 7. On the entozoa and entophytes which may be developed in man All communications respecting the Congress to be addressed to M. Jaccoud, Secretary, 4 Rue Drouot.

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Paris Faculty of Medicine.—This faculty has commenced its winter Session with the following staff of Professors: MM. Gavarret, Medical Physics; Racle (as substitute for Andral), Pathology and General Therapeutics; Jarjavy, Anatomy; Wurtz, Medical Chemistry; Denonvilliers, Operations and Apparatus; Monneret, Medical Pathology; Richet, Surgical Pathology; Robin, Histology; Bouillaud Bucquoy (as substitute for Guillot) and Fournier (as substitute for Grisolle), Clinical medicine; Houel (as substitute for Jobert), Laugier, Velpeau, and Nélaton, Clinical Surgery; and Depaul, Clinical Midwifery. There are also to be delivered certain supplementary courses of lectures by MM. Roger, Diseases of Children; Lasègue, Mental and Nervous Diseases; Hardy, Diseases of the Skin: and Foucher, Diseases of the Eye.

Five Professors have resigned — viz., MM. Andral, born in 1797; Cruveilhier, born 1791; Trousseau, born in 1801; Jobert, born in 1800; and Piorry, born in 1794. M. Trousseau gives the following acount of his resignation:—

"When, well nigh thirty years ago, I was nominated a Professor, and went to call upon Orfila, who was one of my judges (the *concours* then existing in full activity), he said to me: 'Will you have the courage to do what I have decided upon doing? I am one of the most popular of the Professors of the Faculty, and in all probability shall continue to be so for a good while yet, but as soon as I reach my 65th year, without waiting until the public ceases to follow me, I shall retire.' 'I will engage to do the same,' I replied, 'and you may rely upon it I shall not attain caducity in my chair.' I have kept my word; for, having just attained my 65th year, I have sent in my resignation. Let younger men come on, and if we all acted thus, our Faculty, though deprived of that grand institution the *concours*, would recover its former splendour. The labour of practice is already oppressive for more than sexagenarian shoulders; that of teaching is impossible."

The Minister of Public Instruction has announced his intention of immediately filling up the vacant chairs, and requests all candidates to at once send in a statement of claims and qualifications, with an account of the work they have done and of the books they have published. Permutation of chair, a practice much decried by the French Medical reformers, will be put into force; and it is said that M. Monneret will in this way exchange his chair of internal pathology for that of clinical Medicine, and M. Gosselin will take that of clinical Surgery in place of his chair of external pathology, which will be given to M. Broca.

The session was opened on the 3d of November, with the accustomed address of the dean and the usual panegyric on some illustrious deceased medical luminary. M. Wurtz, the dean, spoke very sensibly, and announced various improvements, among which is to be noted a laboratory for practical physiology. His advice to the pupils was extremely good. Professor Jarjavay then gave a vivid and eloquent sketch of the life and career of Malgaigne, whose works and deeds are so well known through the medical world. Both these excellent discourses were listened to by the most unruly, wild, rude, and noisy crowd of pupils, who have, as last year, stamped themselves as men regardless of the age, merit, and high standing of their professors. Their conduct is, by *L'Union Médicale*, denounced as thoroughly unworthy of gentlemen; and the same journal states that these introductory meetings will, owing to such scandalous behaviour, very probably be given up.

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Medical Students in London.—The *Lancet* (Oct. 27, 1866) states that "the number of entries at the several medical schools this year is above that of several preceding years. Notwithstanding the enforcement of a preliminary examination upon those who enrol themselves as medical students, their number falls but little short of that of the years preceeding 1860, when the great rush of candidates for the profession took place. The number of members of the profession in Great Britain has decidedly diminished during the past few years, but this must be due more to the numerous openings for young medical men in India and the colonies, than from any dearth in the supply of medical students, since, with over a thousand pursuing their studies in London alone, the vacancies in the profession must be rapidly filled up."

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Mortality Returns in Paris for 1865.—Together with a meteorological chart for Paris in 1865, Dr VACHER has just published a supplement to the Registration Report for March, 1865, issued by Baron Haussmann, which furnishes a summary of the deaths that occurred in the twenty *arrondissements* of that city during 1865. The total of these amounted to 51,285, of which 26,339 were males and 24,946 females. Of this number, 22,926 were natives of Paris, and 28,359 were born elsewhere. Of the deaths, 37,428 took place *à domicile*, 13,482 in the hospitals, and 124 in the prisons, 251 bodies having been deposited at the Morgue. As to the causes of the deaths, 1162 of these took place from typhoid fever, 765 from smallpox, 945 from croup and diphtheria, 6591 from cholera, and 1568 from other zymotic diseases, making a total of deaths from zymotic diseases of 11,031, or 21.4 per cent. Cancer furnished 1494 deaths, phthisis 8399, and other constitutional diseases 535, the deaths from these causes altogether amounting to 10,428, or 20.3 per cent. Diseases of the heart caused 1458 deaths; of the lungs, 7536; of the brain, 6653; of the digestive canal, 9820; and of the urinary apparatus, 686. There were 706 suicides, 780 deaths from accidents due to carriages and other causes, while the total of 51,285 is completed by 5,187 unclassified deaths. The following years have been marked in Paris by an exceptional amount of mortality: 1709 (famine), when there were 29,288 deaths; 1794 (famine and executions), 30,388; 1814 (typhus and the battle of Paris), 33,116; 1832 (cholera), 44,463; 1849 (cholera) 48,122; 1854 (cholera), 40,968; and 1865 (cholera), 51,285 deaths.

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The Boundou Poison.—At the meeting of the Academy of Sciences of Paris, MM. PÉCHOLIER and SAINTPIERRE reported the results of their experiments on this substance, derived from a shrub of the *Apocynea*, and which is employed by the Africans on the Gaboon in an ordeal liquor. The Boundou contains a poisonous principle soluble in water and alcohol, and produces an action on the sensitive nervous system analogous to that of nux vomica. When administered by the stomach or by the endermic method,

it produces at first an augmentation of the number of inspirations and cardiac pulsations, and afterwards a considerable diminution of those movements. It causes an exaggeration of sensibility, next tetanic convulsions, and finally insensibility, paralysis, and death Its action on the motor nervous system is only secondary, and it does not affect the contractility of the muscular system. It is not a poison of the heart, which, on the contrary, continues to beat for a long time after death. These results were obtained from administration of the poison to rabbits, a dog, and frogs. In some cases the animal slowly recovered. This may be the case sometimes with man, and the Africans regard those champions in the judicial duels who escape from the deadly influence of the Boundou poison as recalled to life by the justice of God demonstrating their innocence.—*Med. Times and Gaz.*, Nov. 17, 1866.

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A Novel Infant's Nursery.—An old stable with 100 infants in the horse-troughs and hay-cribs is rather a novelty, but it is seen in the locality of Union-street, Borough-road, London. The work has been undertaken by the Rev. George Aldington, who has secured an old stable to form a nursery, and has fitted it up for taking care of the young children of women who are obliged to go out to char or work away from home. —*Med. Press and Circular*, Oct. 31, 1866.

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Glorious War.—The Commissioners despatched to the lazarets and field hospitals by the Patriotic Help Association (Hilfsverein) of Vienna has published an interesting report. They draw a pitiable picture of the condition of the peasantry in Northern Bohemia. For six months their country has been occupied by great armies. The peasant's food has been devoured, his field laid waste, his house burnt or torn down and laid in ruins. They declare that the dead were left unburied in many places, and that the poisoned air destroyed the living. Nearly all the amputations made by the Prussian military surgeons ended fatally, but no difference was made in the treatment of Austrian and Prussian wounded by the medical men. They found the condition of the hospitals in all that related to nursing and medical attendance "deplorable." The Commission started to Brünn on the 1st of August with fifteen wagon-loads of medical comforts. In Wilkersdorf they found a Prussian company as a guard to a cholera hospital. The pestilence was so bad that in a short time 450 had died out of 700 patients, and the officer in command said, "I hope in Heaven we shall soon leave this, for my sick will all be dead in a few days." At Pardubitz they found seven wounded Austrian officers, who were getting well in airy, well-shaded tents. At Königgrätz itself they found the hospitals overstocked and short of what was needed. In one house were 115 wounded officers, and in another were 198 more. They needed splints, lint, bandages, medicine, lotions, as well as tobacco and wine. On the 9th the Commissioners visited Rosnitz, Westar, Sadowa, Nechanitz, and Hradek, and describe with horror and astonishment the condition of the country. The hands and feet of the dead were sticking out of the hasty graves. As to the hospitals in these places, the Commissioners declare all appliances and necessaries were deficient. The Prussian doctors deplored their want of success in amputations. Many of the wounded had been left forty-eight hours on the field without help, and were in the most unfavourable condition for treatment by the knife. On the 14th they visited Jaromierz, Skalitz, Nachod, etc., and all the hospitals up to Trautenau. In all cases their supplies were most welcome. The report affords a terrible peep behind the scenes of a great battle—the *après*, when the conqueror has moved off with drums and trumpets, and banners flying in the setting sun, and night settles on the dying and the dead.—*British Medical Journal*, Sept. 15, 1866.

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Prizes of the Royal College of Surgeons of England.—The Council of the Royal College of Surgeons of England has just awarded one of the Jacksonian Prizes of twenty guineas to Mr. William Paul Swain, of Davenport, a Member of the College, for his essay on "The diseased conditions of the knee-joint which require amputation of the limb, and of those conditions which are favourable for excision of the joint, with an explanation of the relative advantages of both operations as far as can be ascertained by cases properly authenticated" Mr. Swain was a pupil of King's College. For the other Jacksonian prize on the relative value of the various modes of treatment of

popliteal aneurism, it does not appear there were any competitors. The following are the subjects for the Jacksonian prizes of the present year—viz., "Ovariotomy: pathology and diagnosis of cases suitable for this operation, with the best method of performing it, and the results of recorded cases; and on "Fractures into joints: their modes of union, with the treatment and result."—*Med. Times and Gaz.*, April 21, 1866.

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Sir Charles Hastings Fund.—With a view to perpetuate the memory of the late Sir Chas. Hastings, it has been determined to raise a special fund for the purpose of founding a medal, and supplementing it with a sum of money, to be awarded for distinguished service in medical science to any member of the profession in any part of the world. A considerable sum has been already collected, and we feel assured that a testimonial worthy of the excellent founder of the British Medical Association will be established.—*Lancet*, Sept. 22, 1866.

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A Live Gorilla.—M. de Quatrefages announced to the Academy of Sciences, that Admiral Fleurian has succeeded in bringing over to France a young live gorilla. The little brute has the free range of the house, and is employed in observing as much as it is the object of observation.

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Museum of the Royal College of Surgeons.—Mr. Flower, the indefatigable conservitor of this museum has been exploring the osteological stores which have been accumulating for many years in the subterranean apartments of the college and has been rewarded by the discovery of the skeleton of that rare and probably extinct bird, the great auk (*Ala impennis*) of which only three other skeletons are known to exist in Europe, and none so perfect as that now at the college. Among other interesting additions to the museum, we may mention a skeleton of the awantibo (*Arctocebus Madagascarensis*) a lemuroid animal, from old Calabar; and the skeleton of another very rare animal presenting several remarkable peculiarities of conformation, the aye-aye (*Cheiromys Madagascarensis*).

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The Head-Quarters of Drunkenness.—Liverpool has been pronounced the most drunken town in England. And it is true. Its extreme drunkenness arrests the attention of the judges, its pauperism weighs heavily upon the ratepayers; its rate, fifty-six per thousand, appalling. The drunken cases dealt summarily with by the magistrates are set down at the annual rate of one in thirty-three of the population. The habitual drunkards, in their periodic appearances before the bench, form an endless chain of besotted creatures. According to the recently published judicial statistics there are 3,100 habitual drunkards in Liverpool, and they are about equally divided as to sexes.—*British Medical Journal*, Sept. 1866, from *Liverpool Albion*.

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M. Jobert de Lamballe.—The death of this eminent surgeon has been erroneously announced in some journals. At the latest dates (Nov. 15th) he was still in an insane asylum, but his condition had somewhat improved.

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Obituary Record.—Died, in Paris, Oct. 6th, of diabetes, aged 77 years, M. Rostan, Professor of Clinical Medicine, and one of the most celebrated physicians of the French capital. M. Rostan was at the head of that school in France, which referred all diseases to organic changes. He was the great rival of Broussais, and has enriched our science with many useful works. As a lecturer he was a great favourite, and retained his popularity with several generations of students.

—— At Nice, Nov. 9th, 1866, M. Natalis Guillot, Professor of Clinical Medicine in the Faculty of Medicine of Paris.

—— At Sydenham, of pleuro-pneumonia, George Hilard Barlow, M. D., one of the physicians to Guy's Hospital, aged 60 years.

The list of physicians who have fallen martyrs to their devotion while succouring the sufferers from cholera, is a very long one. Vienna has lost M. le Baron Wattman-Beauliere, Surgeon to the Emperor, Dr. Franz Lilharzik, Dr. J. Weidinger and Dr. Frese, Emeritus Professor of Zoology in the University. Leipsic has lost Dr. G. Gunther, chief of the surgical clinic of the hospital of that city. Breslau has lost Dr. Klopsch, distinguished by his writings on orthopædy. In the short German war no less than eleven Prussian physicians died from cholera.

The death is announced of Lady Holland, the wife of Sir Henry Holland, and the favourite daughter of Sidney Smith, no small portion of whose brilliant wit and literary power she inherited.

Prospectus for 1867.

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In the Library Department of the "Medical News" for January, 1867, will be commenced a new and valuable practical work, which will maintain the reputation of the series of volumes that have appeared in its columns. New subscribers will therefore find this a particularly desirable time to commence their subscriptions.

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